



FAO/GLOBAL ENVIRONMENT FACILITY PROJECT DOCUMENT



PROJECT TITLE: INTEGRATED MANAGEMENT OF MARINE AND COASTAL AREAS OF HIGH VALUE FOR BIODIVERSITY IN CONTINENTAL ECUADOR
PROJECT SYMBOL: GCP/ECU/084/GFF

Recipient Country/ies: Ecuador

Resource Partner: Global Environment Facility (GEF/GEF)

FAO project ID: 615692

GEF/LDCF/SCCF Project ID: 4770

Executing Partner(s): Ministry of the Environment (MAE), Conservation International Foundation CI, **Humanist Institute For Cooperation HIVOS**

Expected EOD (starting date): June 2014

Expected NTE (End date): June 2018

Contribution to FAO's Strategic Framework

a. Strategic objective/Organizational Result: OE 2 (LO-1, LO2)

b. Regional Result/Priority Area: Sustainable management and use of fisheries resources and aquaculture

c. Country Programming Framework Outcome: PRIORITY AREA 4: Contribute to the consolidation of environmental public policy through conservation, assessment and sustainable management of biodiversity and natural resources as a strategic resource of the State and to ensure ecosystem services, and develop strategies for adaptation and mitigation to tackle climate change and ensure food sovereignty.

GEF Focal Area/LDCF/SCCF: Biodiversity

GEF/LDCF/SCCF Strategic Objectives: BD-1, BD-2

Environmental Impact Assessment Category (insert √): A B C√

Financing Plan:	GEF/LDCF/SCCF allocation:	USD 4,258,788
	<u>Co-financing:</u>	
	Ministry of Environment	USD 9,524,597
	Conservation International	USD 1,881,171
	National Institute of Fisheries	USD 263,787
	HIVOS	USD 550,900
	FAO	USD 250,540
	FAN	USD 802,796
	MAGAP	USD 2,000,000
	GIZ	USD 500,000
	Prefecture of Guayas	USD 300,000
	Wildaid	USD 250,000
	CEDEAL	USD 150,000
	UNHCR	USD 77,000
	<u>Mangrove concessionaries</u>	<u>USD 2,856,356</u>
	<u>Subtotal Co-financing:</u>	<u>USD 19,407,147</u>
	Total Budget:	USD 23,665,935

EXECUTIVE SUMMARY

Ecuador has a high diversity of marine and coastal ecosystems, including nesting beaches for four species of sea turtles (*Chelonia mydas*, *Lepidochelys olivacea*, *Eretmochelys imbricata* and *Dermochelys coriacea*) and extensive mangrove areas (148,230 hectare in 2006). Significant progress has been made to conserve marine and coastal biodiversity, such as the creation of a network of 16

marine protected areas (MPAs) covering 332,968 hectares, and the use of mangrove concessions to traditional users, so they protect areas in exchange for sustainable exploitation of the resources already there. However, coastal environments are primarily threatened by the mismanagement of the waterfront in areas of high biodiversity value, the limited local capacity to efficiently manage mangrove areas and the intense pressure of artisanal fishing on MPAs. These factors are causing degradation of nesting beaches of sea turtles, mangrove deterioration, and severe decline in coastal fishery resources. MPA management is not aligned with municipal management and has not been able to control and manage the fishing activities of local groups and poachers. Additionally, not all concessions have achieved full management of the areas in custody and concessionaires are limited to invest in capital goods.

The proposed project is a joint effort of the Ministry of Environment, CI- Ecuador, HIVOS, other local stakeholders, FAO and the GEF to reinforce the conservation of coastal areas of high biodiversity value. The project will focus on protecting sea turtles nesting beaches, strengthen development of mangrove concessions granted to local groups, and improve rights based mechanisms to sustainably manage fisheries within marine protected areas and mangrove concessions; all supported by reinforcement of the regulatory framework for conservation and management of marine and coastal biodiversity.

The **Global Environment Objective** is to develop an integrated management approach for the use and conservation of coastal and marine areas of high biodiversity value, by establishing conservation areas, strengthening mangrove concessions and integrating biodiversity conservation in fisheries management within conservation areas. The **Project Development Objective** is to improve and sustain livelihood conditions for coastal communities depending on near shore fisheries, in particular fishermen and women catching red and brown shell crab for a living in the Gulf of Guayaquil and estuary of Cayapas - Mataje.. The project has four components:

- Component 1. Integrated management of coastal areas of high-value for biodiversity
- Component 2: Conservation of biodiversity in fisheries management.
- Component 3: Strengthening of the regulatory framework for the conservation and management of marine and coastal biodiversity.
- Component 4: Monitoring, evaluation and dissemination of information.

The **expected results** are: (1) Four new coastal-marine conservation areas (c.a., 15.000 ha) will be under integrated and effective management (at least 50/90 points in the management effectiveness tracking tool of GEF, METT) leading to stabilizing or increasing the detection of green turtle, olive ridley sea turtle and leatherback turtle nesting sites (<15 % variation); (2) Conservation of integrated biodiversity in the management of at least 96,000 hectares of mangroves given under concession to community groups, which leads to stabilization or increase in the abundance of species in the ecosystem (crab, dark clam) and threatened species hawksbill turtle (*Eretmochelys imbricata*) and the coast crocodile (*Crocodylus acutus*) (<15% change); (3) 144,000 hectares of marine protected areas (REMACAM, REMGSF, RMEP, rivet and REVISMEM) and at least 25,000 hectares under mangrove concessions are under sustainable fisheries management, which leads to stabilization or increase in the main fish resource catches (i.e. crab *Ucides Occidentalis*, dark clam *Anadara tuberculos*, lobster *Panulirus gracilis* and *P. penicillatus*, Pacific bearded brotula *Brotula clarkae* and octopus *Octopus* spp); and (4) Conservation measures for the sustainable use of coastal marine biodiversity mainstreamed in regulatory framework for mangrove concessions, fisheries in MPAs, and for the municipal management of coastal zones.

TABLE OF CONTENTS

GLOSSARY OF ACRONYMS	4
SECTION 1 – RELEVANCE (STRATEGIC FIT AND RESULTS ORIENTATION) ...	7
1.1 GENERAL CONTEXT	7
1.1.1 Justification	18
1.1.2 FAO’s comparative advantages	33
1.1.3 Participants and other stakeholders	34
1.1.4 Lessons learned from past and related work, including evaluations.....	34
1.1.5 Links to national development goals, strategies, plans, policy and legislation, GEF and FAO’s Strategic Objectives	36
SECTION 2 – PROJECT FRAMEWORK AND EXPECTED RESULTS	39
2.1 PROJECT STRATEGY	39
2.2 PROJECT OBJECTIVES	39
2.3 EXPECTED PROJECT OUTCOMES	39
2.4 PROJECT COMPONENTS AND OUTPUTS	40
2.5 GLOBAL ENVIRONMENTAL BENEFITS/ADAPTATION BENEFITS	66
2.6 COST EFFECTIVENESS	67
2.7 INNOVATIVENESS	68
SECTION 3 – FEASIBILITY (FUNDAMENTAL DIMENSIONS FOR HIGH QUALITY DELIVERY)	69
3.1 ENVIRONMENTAL IMPACT ASSESSMENT	69
3.2 RISK MANAGEMENT	70
3.2.1 Risks and mitigation measures.....	70
3.2.2 Fiduciary risk analysis and mitigation measures	72
SECTION 4 – IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS	74
4.1 INSTITUTIONAL ARRANGEMENTS	74
4.2 IMPLEMENTATION ARRANGEMENTS	76
4.3 FINANCIAL PLANNING AND MANAGEMENT	86
4.3.1 Financial plan (by component, outputs and co-financier).....	86
4.3.2 GEF inputs	90
4.3.3 Government inputs	90

4.3.4	FAO inputs	91
4.3.5	Other co-financiers inputs	91
4.3.6	Financial management of and reporting on GEF resources	92
4.4	PROCUREMENT	94
4.5	MONITORING AND REPORTING	94
4.5.1	Oversight and monitoring responsibilities	94
4.5.2	Indicators and information sources	95
4.5.3	Reporting schedule	96
4.5.4	Monitoring and evaluation plan summary.....	98
4.6	PROVISION FOR EVALUATIONS	100
4.7	COMMUNICATION AND VISIBILITY	100
SECTION 5 – SUSTAINABILITY OF RESULTS		102
5.1	SOCIAL SUSTAINABILITY	102
5.2	ENVIRONMENTAL SUSTAINABILITY	103
5.3	FINANCIAL AND ECONOMIC SUSTAINABILITY	103
5.4	SUSTAINABILITY OF CAPACITIES DEVELOPED	104
5.5	APPROPRIATENESS OF TECHNOLOGY INTRODUCED.....	104
5.6	REPLICABILITY AND SCALING UP	104
APPENDIX 1: RESULTS MATRIX		105
APPENDIX 2: WORK PLAN (RESULTS BASED).....		117
APPENDIX 3: RESULTS BUDGET		129
APPENDIX 4: RISK MATRIX.....		136
APPENDIX 5: PROCUREMENT PLAN		137
APPENDIX 6: TERMS OF REFERENCE (TORS).....		138
APPENDIX 7: MPAS AND MANGROVE CONCESSIONS IN CONTINENTAL ECUADOR.....		143
APPENDIX 8. PRINCIPALES ESPECIES MENCIONADAS EN EL TEXTO		144

GLOSSARY OF ACRONYMS

ANRPV	National Recreation Area Playas de Villamil
ARP	Project Resource Manager
AWP/B	Annual Work Plan and Budget
BH	Budget Holder
BID	Interamerican Development Bank
CBD	Convention on Biological Diversity
CD	Project Steering Committee
CEO	Chief Executive Officer (GEF)
CI-Ecuador	Conservation International Ecuador
CIM	Inter-Institutional Sea Committee
CIT	Inter- American Convention for the Protection and the Conservation of Sea Turtles
CITES	The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
CLIRSEN	Center for the Integrated Surveying of Natural Resources by means of Remote Sensing (CLIRSEN)
CMS	Convention on the Conservation of Migratory Wild Species
COOTAD	The Organic Code on Territorial Organization, Autonomy and Decentralization
COP	Coastal and Ocean Policies
CPUE	Catch per effort unit
CR	Critically endangered according to IUCN red list
DD	Data deficiency according to IUCN red list
DIRNEA	National Directorate of Aquatic Areas
DNP	National Project Director
DPF	Data-poor fisheries
EN	Endangered according to IUCN red list
EP	Executing Partner
ETPS	Eastern Tropical Pacific Seascape
FAN	National Environmental Fund
FAN	Protected Areas Fund
FAO	Food and Agriculture Organization of the United Nations
FIA	Final Independent Evaluation
FIDA	International Fund for Agricultural Development
FPMIS	Field Project Management Information System
FSP	Full Size Project
GAD	Autonomous Decentralised Government
GEBs	Global Environmental Benefits
GEF	Global Environment Facility
GEFSEC	GEF Secretariat

HIVOS	Humanist Institute for Cooperation with Developing Countries
ICM	Integrated Coastal Management
IEA	Initial Environmental Assessment
IIE	Intermediate Independent Assessment
INP	National Institute of Fisheries
IUCN	International Union for Conservation of Nature
KfW	German Financial Cooperation Agency
LC	Least concern according to IUCN red list
LFANVS	Forestry and Natural Areas and Wildlife Law
LRP	Limit Reference Points
LTO	Lead Technical Officer
LTU	Lead Technical Unit
M&E	Monitoring and Evaluation
MAE	Ministry of Environment of Ecuador
MAGAP	Ministry of Agriculture, Livestock, Aquaculture and Fisheries
MAS	Management Alternative Studies
METT	Management Effectiveness Tracking Tool
MINTUR	Ministry of Tourism
MPA	Marine Protected Area
MSY	Maximum Sustainable Yield
NBSAP	National Biodiversity Strategy and Action Plan
NT	Near threatened according to IUCN red list
ONG	Non-Governmental Organizations (NGO)
PAN Dorado	National Action Plan for the Conservation and Management of the Dorado Resource in Ecuador
PANE	Natural Heritage Areas of the State
PAT-EC	National Action Plan for the Conservation and Management of Sharks in Ecuador
PIF	Project Identification Form (GEF)
PIR	Project Implementation Review
PIR	Project Implementation Review
PM	Project Manager
PMC	Project Management Committee
PMRC	Ecuador Coastal Resources Management Program
PNBV	National Plan for Good Living
PNM	Machalilla National Park
PPG	Project Preparation Grant (GEF)
PPR	Project Progress Report
PRODOC	Project Document
PSC	Project Steering Committee
PY	Project Year
RBM	Rights-based fisheries management

REMACAM	Cayapas-Mataje Mangrove Ecological Reserve
REMACH	Churute Mangrove Ecological Reserve
REMACOPSE	Puntilla de Santa Elena Coastal Marine Wildlife Production Reserve
REMGSF	Galera San Francisco Marine Reserve
REVISMEM	El Morro Wildlife Mangrove Refuge
RMEP	El Pelado Marine Reserve
SCU	Surveillance and Conservation Unit
SENPLADES	National Secretariat for Planning and Development
SETEMAR	Technical Secretariat of the Sea
SGMC	MAE Coastal and Marine Management Undersecretariat
SGP	Small Grants Programme
SIMCE	Coastal Marine Information System of Ecuador
SNAP	National System of Protected Areas
SRP	Fisheries Resources Undersecretariat
STAP	Scientific and Technical Advisory Panel
TCI	Investment Centre Division (FAO)
TOR	Terms of Reference
TRP	Target Reference Points
TULAS	Unified Text on Subsidiary Legislation of the Ministry of the Environment
TURF	Territorial user rights for fisheries
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USD	United States Dollar
VU	Vulnerable according to IUCN Red list
WFF	Walton Family Foundation
ZC	Zone Committees

SECTION 1 – RELEVANCE (strategic fit and results orientation)

1.1 GENERAL CONTEXT

a) General development context related to coastal marine ecosystems and biodiversity

Ecuador has 2,859 km of continental coastal areas formed by cliffs, tide pools and beaches. The most notable coastal geographical feature is the Gulf of Guayaquil, an estuarine system, which houses the largest concentration of mangroves in the country and numerous islands and islets. In the area outside the Gulf is Puna Island with an area of 920 km².

In the Ecuadorian mainland there is a high diversity of marine and coastal ecosystems including 21 of the 27 marine and coastal ecosystems globally recognized¹ (10 of the 14 marine and 11 of the 13 coastal ecosystems). In part, the diversity is due to that the Ecuadorian mainland is at the confluence of two large marine ecosystems (ie, Humboldt Current and the Central Pacific.) Here the cold waters of the Humboldt Current meet the warm waters of the Panama bay, forming the equatorial front, which moves seasonally depending on the strength of the currents. The multiplicity of environments is used by diverse biota, including globally significant biodiversity. For example, the Ecuadorian mainland's beaches are nesting areas of four species of sea turtles²: green turtle (*Chelonia mydas*, EN), olive ridley (*Lepidochelys olivacea*, VU), hawksbill (*Eretmochelys imbricata*, CR) and leatherback (*Dermochelys coriacea*, VU). It has been observed that sea turtles use estuaries and low areas to rest and feed. The green turtle uses the Plata Island as a resting and feeding area³ and hawksbill turtle follows routes close to the coast during their post- nesting migrations and uses mangrove estuaries as their main foraging habitat⁴.

The mangrove is an ecosystem of particular importance. Globally it is recognized that mangroves have high conservation value for the goods and services they produce, such as: 1) foraging, reproduction, shelter and breeding area of marine species and fishery resources (e. g. shrimp and Pacific bearded brotula); 2) wildlife habitat including for endangered species such as the coastal crocodile (*Crocodylus acutus*)⁵ and the otter (*Lontra longicaudis*); 3) coastal protection; and 4) the production and accumulation of carbon and nutrients. In the past century Ecuador's mangroves were seriously threatened by the transformation of coastal areas into shrimp farms. Large areas of mangrove, beaches and bays were given in concession to the shrimp industry for construction of pools. Additionally, many shrimp farms settled illegally and others illegally expanded by cutting down mangroves. Consequently, mangrove cover has decreased from 202,695 hectares in 1969⁶ to 146.938 hectares in 1995⁷. This caused severe

¹ Salm, R.V., J.R. Clark & E. Siirila. 2000. Marine and Coastal protected areas: a guide for planners and managers. Third edition. IUCN. Washington DC: 371 pp.

² Baquero, A., Muñoz, J.P. & M.Peña. 2008. Identification of nesting beaches for marine turtles in Ecuador's coast and its main threats. First evidence of nesting in some beaches in the country. In Kelez, S., Van Oordt, F., de Paz, N. & Forsberg, K. (eds.) Second Symposium of Marine Turtles in South Eastern Pacific Book of Summaries.

³ Muñoz, J.P. 2009. Identification and preliminary study of critical sites for nesting, foraging and rest of marine turtles in the center and northern coast of Ecuador. Graduation thesis B.A. in Ecology and Natural Resources, Applied Ecology Award. Universidad San Francisco de Quito. Quito, Ecuador: 27 pp

⁴ Inter-American Convention for the Protection and Conservation of Marine Turtles 2012. Conservation status and use of habitats of marine turtles in the Eastern Pacific Ocean. CIT-CC8-2011-Tec.1. 28pp.

⁵ This species is categorized as critically endangered and it is included in the red list of reptiles of Ecuador. In 2006, MAE adopted the national strategy for in situ conservation of the coastal crocodile (*Crocodylus acutus*), which was published in Official Register 422, dated December 21st, 2006.

⁶ CLIRSEN. 1991. Multi-temporal study of mangrove, shrimp farms and saltine areas in Ecuador's continental coast through information from remote sensors. Coastal Resources Management Program (PMRC).Study Serie 3. June, 1991: 57-93.

⁷ CLIRSEN. 2007. Update of the multi-temporal study of mangrove, shrimp farms and saltine areas in Ecuador's continental coast in 2006. MAE-PMRC: 77 pp.

environmental impacts in small estuaries (eg, Chone River⁸) and changes in the social and economic dynamics of traditional mangrove⁹ users.

The mangrove has traditionally been considered as a source of many goods and services that are highly valued by society, including nutrients, fisheries resources, building materials, and charcoal. The mangrove also has a great cultural importance for coastal communities that have developed several traditions, myths, stories and legends, based on this ecosystem. Traditionally, land ownership was communal, although the intertidal area where the mangrove is located is public property. The mangrove ecosystem provide resources for artisanal fisheries, including the species dark clam (*Anadara tuberculosa* and *A. similis*) and the crab (*Ucides occidentalis*), forming the base of the economy and diet of communities living in the mangrove area. These species live in the sediment and are manually harvested by fishermen. In mangroves of the province of Esmeraldas, the main type of clam is the dark one, and the main harvesters are women. In the Gulf of Guayaquil, the main species that is caught is the crab, although there are clam areas in the zone outside the Gulf (e.g. the Jambeli archipelago). These species are mainly caught by men. Dark clams and crabs are sold at domestic markets, where demand is increasing. These species also have a great ecological value, since they are the prey of several animals and are basic components of the recycling of nutrients of the estuaries.¹⁰

Fishing is a major activity in coastal communities and has a high social, economic and cultural value. However, the deterioration of several coastal fishing resources is evident. Artisanal fishermen, who have other options than near shore fisheries, now go offshore for several weeks to make a living. The coastal fisheries resources are severely overexploited and catches per fisherman are decreasing as well as the size of the fish caught. Artisanal fishermen freely catch fish in marine protected areas (MPAs) without any management of fisheries resources. There are only a few specific cases in the Reserva Ecológica Manglares Churute (REMACH, Churute Mangrove Ecological Reserve) and Reserva Marina Galera San Francisco (RMGSF, Galera San Francisco Marine Reserve) applying very basic practices of fishing management. Among seriously overexploited species are the sea cucumber (*Isostichopus fuscus*) and the spondylus clam (*Spondylus calcifer* and *Spondylus princeps*), which are becoming extinct, and the capture of the lobster (*Panulirus gracilis* and *P. penicillatus*) are now completely forbidden because of the very small population left. The species that can be exploited have important functions in marine ecosystems. For example, the lobster, and the octopus (*Octopus* spp.) and the Pacific bearded brotula (*Brotula clarkae*) are basic components of the food chain balance of benthic communities of the sea front, since they are both predators and preys. The lobster is an important prey for other animals such as octopuses, sharks, rays and groupers, but it is also a predator of several invertebrates (e.g., sea urchins and snails) and controls the size of the population of these animals. Likewise, the octopus is the prey of several animals in its larval, youthful, and adult stages,¹¹ but it is also an aggressive predator that consumes fish, mollusks, echinoderms, crustaceans, and polychaetes.

⁸ Coello, S., Proaño-Leroux, D. & Robadue, D. 1993. Special area management planning in Ecuador's Río Chone estuary. pp. 78 - 93 In Sorensen, J., Gable, F. & Bandarin, F. (eds.) The management of coastal lagoons and enclosed bays. Proceedings of Coastal Zone'93, American Society of Civil Engineers, USA.

Coello, S., Vinueza, D., Echeverría, M.F., Cisneros, F., Astudillo, J. Herrera, E. Cervantes, G. Andrade, J. Pérez, J. Soccola, E. Avilés, S. Bravo, B. Real, M. Cárdenas, M. Triviño & J. Vera. 2009. Diagnóstico ambiental de las cuencas de los ríos Chone y Portoviejo. Report prepared for the Ministry of the Environment. Ecobiotec del Ecuador.

⁹ Yépez, V. 2001. Los manglares, un legado ancestral - tenencia de la tierra en zonas de manglar. Portal sobre Conservación y Equidad Social. UICN-Sur. En línea: http://www.portalces.org/index.php?option=com_content&view=article&id=52&Itemid=10000049

Mera, V. 1991. Género, manglar y subsistencia. Ediciones Abya-yala. 171 pp.

¹⁰ Twilley, R.R., Pozo, M., García, V.H., Rivera-Monroy, V.H., Zambrano, R. & Bodero, A. 1997. Litter dynamics in riverine mangrove forests in the Guayas River estuary, Ecuador. *Oecologia* 111:109-122.

¹¹ The main predators of adult octopuses are sharks and large bony fish (for example, groupers and morays).

The Pacific bearded brotula is a predator that feeds mainly from crustaceans (basically from crabs of the Mithracidae family) and fish (fundamentally from the Engraulidae family), and it is also prey of large fishes such as sharks. The overexploitation of fish not only exhausts the populations of exploited resources, but also changes the structure of marine ecosystems and simplifies the food chain of the sea.¹²

b) Legal and institutional framework for coastal marine ecosystems and biodiversity

Ecuador is one of the pioneering countries of integrated coastal management (ICM). In 1986, pilot activities were started, which were subsequently consolidated in a national program under the President's office: the Ecuadorian Coastal Resources Management Program (PMRC, Spanish acronym).¹³ This program developed management instruments and human capacities that addressed several aspects of coastal management, including the management of mangroves, tourism regulation and planning,¹⁴ and regulations on the use of beaches and the integration of sectorial authorities. This program was cancelled in 2008 and the tasks were transferred to the Ministry of Environment of Ecuador (MAE).¹⁵ Based on this experience, in the past years, the Ecuadorian State has made significant progress in the political and legal framework for the conservation of coastal marine biodiversity and the sustainable management of marine and coastal areas.

The Constitution of the Republic of Ecuador establish that the State shall regulate the conservation, management, sustainable use, recovery, and ownership of marine and coastal ecosystems¹⁶. The management of beaches will be carried out by municipalities, according to the constitution.¹⁷ Consequently, the Organic Code of Territorial Organization, Autonomy and Decentralization (COOTAD) establishes, among the exclusive tasks of municipal autonomous governments (GAD), activities related to the definition, regulation, authorization and monitoring of the use of beaches and the issuance of ordinances on such issues.

MAE formulates national environmental policies and, among other functions, manages native biodiversity. MAE is also in charge of creating, by means of a ministerial agreement, the National System of Protected Areas (SNAP), and of its management. However, for the creation of marine reserves, the previous consent of other authorities is required, if such authorities have affected jurisdiction and competencies¹⁸ (for example, the fishing authorities). The Under-Secretariat of Marine and Coastal Management (SGMC)¹⁹ is in charge of the management of MPAs. Likewise, MAE is in charge of the fulfillment of the commitments of Ecuador before several international bodies such as the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Wild Species (CMS) and the Inter-American Convention for the Protection and the Conservation of

¹² Jackson, J.B, Kirby, M.X., Berger, W.H., Bjorndal, K.A., Botsford, L.W., Bourque, B.J., Bradbury, R.H., Cooke, R., Erlandson, J., Estes, J.A., Hughes, T.P., Kidwell, S., Lange, C.B., Lenihan, H.S., Pandolfi, J.M., Peterson, C.H., Steneck, R.S., Tegner, M.J. & R.R. Warner. 2001. Historical overfishing and the recent collapse of coastal ecosystems. *Science* 293(5530): 629-37.

Pauly, D., Christensen, V., Dalsgaard, J., Froese, R. & F. Torres. 1998. Fishing Down Marine Food Webs. *Science* 279 (5352): 860-863.

Pauly, D. & M.L. Palomares. 2005. Fishing Down Marine Food Webs: it is far more pervasive than we thought. *Bulletin of Marine Science* 76(2): 197-211.

¹³ The PMRC experience is documented in several publications and in a digital website 'Coastal Marine Information System of Ecuador (SIMCE). SIMCE is an online website that is used to compile, organize and disseminate environmental information on coastal and marine areas. The website includes information on mangrove and MPA concession management plants, management data on MPAs and interactive maps. The site can be accessed at <http://simce.ambiente.gob.ec>.

¹⁴ PMRC drew up technical regulations for the certification of tourism beaches, which were subsequently included in an official manner in the Ecuadorian Technical Standard NTE INEN 2631:2012. Tourism. Beaches. Tourism Certification Requirements.

¹⁵ Executive Decree 1254 published in Official Register 410, dated August 25th, 2008.

¹⁶ Article 406.

¹⁷ Article 264.

¹⁸ Article 106 of the Natural Areas and Wildlife Forestry Act (coding of 2004).

¹⁹ This was created by Agreement 024 published in Official Register 558, dated March 27th, 2009.

Sea Turtles (CIT). For the management of endangered species, MAE have adopted national conservation strategies or action plans, such as the "National in situ Conservation Strategy of Coastal Crocodiles (*Crocodylus acutus*)"²⁰ and there is a draft for the National Conservation Strategy of Sea Turtles.

Mangroves have several regulatory instruments for conservation and management. The Constitution of the Republic of Ecuador includes mangroves as fragile and threatened ecosystems over which the State can establish regulations for their conservation, management, sustainable use, recovery, and ownership limitations.²¹ The MAE is the authority in charge of their administration. In 1990, the Forestry, Natural Areas, and Wildlife Act was amended in order to declare all mangrove areas (including those that were in private sector properties) state properties whose exploitation can be made only by means of concessions.²² In 1999, the regulatory framework²³ for traditional users of mangroves was put in place allowing for the application for concessions of mangrove areas and their exploitation, through a sustainable use and protection agreement²⁴ issued by MAE.

SGMC will be the cross-section operational body of MAE for all issues of the current project. In December, 2013, MAE established a National Directorate for Incentive mechanisms for conservation of fragile ecosystems and it was assigned the task of designing and implementing the economic incentive system called "Socio Manglar" (Mangrove Partner)²⁵, to support mangrove concession grantees.

The fishing regulatory framework is defined in the "Fishing and Fishing Development Act"²⁶. Fishing resources are managed by the Under-Secretariat of Fishing Resources (SRP) of the Ministry of Agriculture, Livestock, Aquaculture and Fisheries (MAGAP). The National Fishing Authority establishes, through ministerial agreements, exploitation conditions to regulate fisheries (for example: crab, dark clams, and lobsters) and protective measures for sensitive species (such as whales, rays, whale sharks, sea turtles)²⁷, and adopts plans for the conservation and management of specific species.²⁸ There are specific regulations for fisheries of crab, dark clams, and lobsters.

The National Fisheries Institute (INP), attached to the MAGAP and with offices in Guayaquil, has the objectives to: (i) carry out scientific and technological research of marine resources, ecosystems, species and habitats in order to assess potentials for their sustainable exploitation, diversify production, promote the development of the fishing industry and achieve optimal and rational use, and (ii) provide scientific and technical assistance to activities related to research in marine resources and their related activities.

The Technical Secretariat of the Sea (SETENAR, an entity under the National Secretariat for Planning and Development or SENPLADES) is the responsible body for the intersectoral

²⁰ Agreement 142, published in Official Register 422, dated December 21st, 2006.

²¹ Article 406 of the 2008 Constitution of the Republic of Ecuador.

²² Act 91 published in Official Register 495, dated August 7th, 1990.

²³ Executive Decree 1102 published in Official Register 243, dated July 28th, 1999. Subsequently instructions were issued to draw up agreements for mangrove sustainable use and protection (Agreement 172 published in Official Register 365, dated January 20th, 2000). It was amended by Agreement 129 (published in Official Register 283, dated September 21st, 2010) and Agreement 144 (issued on August 9, 2011).

²⁴ Henceforth the term mangrove concessions will be used to refer to agreements on mangrove sustainable use and protection.

²⁵ This was based on the experience of the economic incentive program for the conservation of native forests and moorlands (*páramo*), called "Socio Bosque" (Forest Partner).

²⁶ Coding of the Fisheries and Fisheries Development Act published in Official Register 15, dated May 11, 2005.

²⁷ SRP established, in 1990, the protection of sea turtles and banned their capture and sale by Agreement 212 (published in Official Register 581, dated December 12, 1990). Subsequently, in 2002, the mandatory use of turtle excluder devices was established for shrimp trawler ships. (Executive Decree 3198, published in Official Register 690, dated October 14th, 2002).

²⁸ Ecuador has adopted the "National Action Plan for the Conservation and Management of Sharks in Ecuador" (PAT-EC) and the "National Action Plan for the Conservation and Management of Dorado (Goldfish) Resources in Ecuador" (PAN Dorado).

coordination among state bodies, for the implementation and follow-up on policies for the development of the coastal marine territory. SETEMAR is the Technical Secretariat of the Inter-Institutional Sea Committee²⁹ (CIM) that approves and coordinates domestic policies related to sea spaces. CIM has established sea and coastal policies. The project is aligned with Policy 1, since it will³⁰ contribute to the conservation of marine and coastal biodiversity.

National Directorate of Aquatic Areas (DIRNEA) is the domestic marine authority in charge of sea control based on the Code for Marine Police³¹. DIRNEA is the administrator of Port Captaincies that implement regulations and norms on aquatic spaces. Port Captaincies coordinate the actions of Surveillance and Conservation Units (UCVs) covering specific geographical action spheres. Naval personnel supports patrols of MPAs and mangrove areas and can arrest offenders.

c) Threats to coastal marine biodiversity and barriers for the appropriate management of marine and coastal areas

The Ecuadorian State acknowledges the richness of its marine and coastal biodiversity and its high social and economic value for the country³² and that important progress and efforts have been made to preserve and exploit it in a sustainable manner.

However, there are threats that might endanger biodiversity. In a recent global study, a model was developed that summarized 17 human induced drivers that produce changes in marine ecosystems.³³ In such study, it was determined that, in Ecuador, the coasts of the provinces of Esmeraldas, Manabi and Guayas face greater levels of threats (Figure 1a).

²⁹ CIM and SETEMAR were created by Executive Decree 990 published in Official Register 617, dated January 12, 2012. CIM has the following tasks: 1. Approve and coordinate the national policy on sea space. 2. Plan the national policy for the development of sea interests of the State. 3. Monitor interministry cooperation to verify that coastal marine area issues correspond and fulfill established intersectoral policy. 4. Establish policies to harmonize the activities of directorates, institutes and other national bodies related to sea space in order to define their powers and avoid the overlapping of tasks and powers.

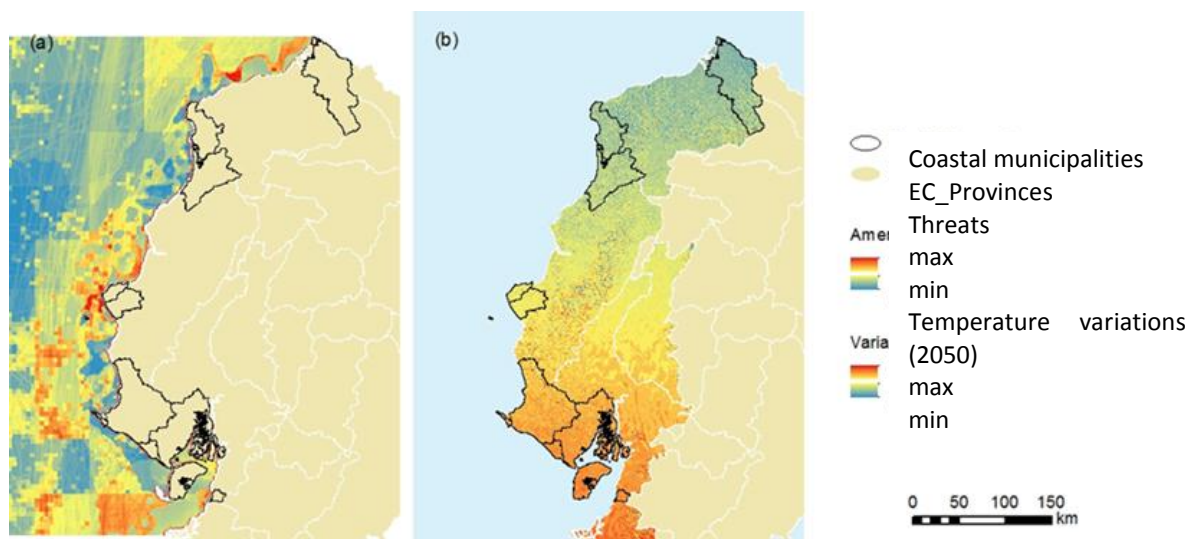
³⁰ Preserve the natural and cultural heritage, ecosystems and biodiversity of marine and coastal areas, respecting the rights of nature in continental Ecuador, the Galapagos Archipelago, the territorial sea, adjacent areas, the exclusive economic zone and the Antarctica area that belongs to Ecuador.

³¹ Published in the Supplement of Official Register 1202, dated August 20, 1960.

³² Review the National Policy and Strategy of Biodiversity of Ecuador established as a State policy, by Executive Decree 2232, published in Official Register 011, dated January 30, 2007.

³³ Halpern, B.S. Walbridge, S., Kimberly, A., Kappel, C., Micheli, F., D'Agrosa, C., Bruno, J., Casey, K., Ebert, C., Fox, H., Fujita, R., Heinemann, D., Lenihan H., Madin, E., Perry, M., Selig, E., Spalding, M., Steneck, R., & Watson, R. 2008. A Global Map of Human Impact on Marine Ecosystems. *Science* 319(5865): 948-952.

Figure 1. Intensity of human-induced pressures on marine ecosystems (a) and climate changes predicted for the year 2050 (b).



The main threats on marine and coastal biodiversity of the Ecuadorian continental area are:

1. **Accelerated development of the waterfront.** The waterfront is quickly being modified due to strong pressures of urban and tourism development. In the first half of the previous century, the development of the waterfront was just beginning. The coastal population was concentrated in large populated centers and access to beaches was very limited. Tourism was just beginning and it was focused on more accessible areas such as Atacames, Puerto Lopez, Salinas, and General Villamil. However, in the last 50 years, the installation of laboratories for the production of shrimp larvae, the growing demand for space for sun and beach tourism and land for the construction of vacation homes, and the construction of the Pacific Ocean road³⁴ have resulted in a rapid urbanization process of the waterfront, without environmental considerations, and access to previously inaccessible places, which is adversely affecting coastal biodiversity. The role of coastal tourism deserves special attention, since it has experienced an accelerated growth. For example, in the 2012 beach season, 1.5 million people visited the beaches of Ecuador. Tourists concentrated (in descending order) in the following towns: Salinas, General Villamil, Montañita, and the coastal area between Puerto Lopez and Salango, and Atacames. MAE estimates that visits to the Machalilla National Park (PNM) increased from 28,000 visitors, in 2005, to 180,000 visitors, in 2013. This massive shift to the coast is focused mainly on sun and beach tourism and has severe impacts on biodiversity. High concentrations of people on beaches occur, and they generate large amounts of waste (e.g. plastic, cigarette butts). In general, they carry out harmful practices such as invertebrate collection, destruction of coastal vegetation, and vehicle circulation on the beach. It is estimated that mass tourism activities generate 38,000 tons / year of waste,³⁵ but coastal municipalities, in general, have a limited capacity to handle waste.

³⁴ This road, whose construction began in the 90's, follows the shores of provinces of Esmeraldas, Manabí and Santa Elena. The road starts at the international Mataje bridge (Esmeraldas) and ends at Salinas (Santa Elena).

³⁵ Coello, S. & Macías R. 2005. Situación de la basura marina en Ecuador (Conditions of Marine Waste in Ecuador) Comisión Permanente del Pacífico Sur (Permanent Commission of South Pacific Regions) Plan de acción para la protección del medio marino y áreas costeras del Pacífico Sudeste: (Action Plan to Protect the sea and coastal area environment of the Southeast Pacific Regions:) 63 pp.

2. **Degradation of beaches for nesting of sea turtles** Sea turtles have a high value for global and national conservation. They are charismatic species that are adversely affected by improper use of the waterfront and, therefore, nesting beaches may constitute conservation targets that will promote the appropriate use of the coastal zone. Regarding the information available on nesting in those areas, it is known that, in 2013, 184 newborns of turtles were registered in the beaches of San Lorenzo and La Botada³⁶ (Manta County, province of Manabi), out of which 96% were ridley turtles and 4% were green turtles. 98% of female turtles that came to these shores achieved positive nesting, thus fulfilling the ideal characteristics of a beach for sea turtle nesting. In 2014,³⁷ the arrival of leatherback turtles was registered at the beach of San Lorenzo (province of Manabi), which was the first official register of nesting of this species in Ecuadorian beaches. The accelerated development of the waterfront and the disorganized tourism has changed the areas of beaches where sea turtles nest. Although the important nesting beaches are protected at the Machalilla National Park, the rest of the turtle nesting beaches are not protected.³⁸

3. **Land-based pollution.** There are still important discharges of waste and non-processed wastewater directly in beaches, estuaries, and rivers that drain into coastal marine areas. In Ecuador, it has been estimated that between 2,482 and 7,447 tons of waste ends up in marine ecosystems each day³⁹. Additionally, in coastal regions, non-processed wastewater and pollutants are discharged into the coastal ecosystems. The most dangerous ones are those produced by mining, hydrocarbon, and agricultural activities. Equally, aquaculture farms daily discharge large amounts of organic matter in estuaries. In spite of significant progress, coastal municipalities do not have sufficient capacities to manage waste and domestic and industrial wastewater.

4. **Alteration of the natural flow of sediment and freshwater and seawater in mangroves.** The deforestation of watersheds and the construction of infrastructure (e.g. dams, diversion channels for flood control, tidal dams, and river blocking) alter the operations of mangroves increasing inflow of sediments from upstream. There are extreme cases such as the estuary of Chone river where the estuary functioning was completely changed as a consequence of the construction of several civil engineering works upstream.⁴⁰

5. **Mangrove ecosystem deterioration caused by disordered and harmful artisanal fisheries.** The aquatic fauna species of mangroves is strongly pressured by disordered and harmful artisanal fishing activities. This adversely affects fish stocks and ecological and food-chain dynamics of associated estuarine and marine environments. Dramatic falls in the catches per effort unit of dark clams have been registered.⁴¹ According to historic data,

³⁶ Ponce, L. 2013. Resultados del primer período anual del proyecto conservación de tortugas marinas; reducción de las amenazas al hábitat de anidación en las playas San Lorenzo y La Botada. (Results of the first annual period of the sea turtle conservation project; reducing threats to the nesting habitat at San Lorenzo and La Botada beaches.) Ministry of Environment: 58 pp.

³⁷ Ponce, L. 2014. Primer registro de anidamiento de tortuga laúd en Ecuador (First nesting register of the hawksbill turtle in Ecuador) Internal document of the Ministry of Environment of Ecuador (MAE).

³⁸ Muñoz, J.P. 2009. Identificación y estudio preliminar de los sitios críticos para anidación, forrajeo y descanso de las tortugas marinas en la costa centro y norte del Ecuador. (Identification and preliminary study of the critical sites for nesting, foraging and resting of sea turtles in the central and northern coast of Ecuador.) Undergraduate Degree on Ecology and Natural Resources, Applied Ecology Issues. Universidad San Francisco de Quito, School of Biological and Environmental Sciences. Quito, Ecuador: 27 pp.

³⁹ Coello, S. & Macías R. op.cit.

⁴⁰ Coello, S., Vinuesa, D., Echeverría, M.F., Cisneros, F., Astudillo, J. Herrera, E. Cervantes, G. Andrade, J. Perez, J. Soccola, E. Aviles, S. Bravo, B. Real, M. Cardenas, M. Triviño & J. Vera. 2009. Diagnóstico ambiental de las cuencas de los ríos Chone y Portoviejo. (Environmental Diagnosis of the basins of Chone and Portoviejo Rivers) Report drawn up for the Ministry of Environment. Ecobiotec del Ecuador.

⁴¹ This is a species with a great demand in domestic markets, whose capture in mangroves is the main source of livelihood for many coastal communities. In the province of Esmeraldas, fishing has a great social value, since women and children carry out this activity.

the amounts of clams caught fell from 400 to 600 clams/person/day to the current 105 clams/person/day, and 60% of clams caught were of sizes smaller than the minimum allowed size for fishing (i.e. 45 mm)⁴². There is empiric evidence that the populations of dark clams in the provinces of Esmeraldas and El Oro have collapsed. Another example is the crab,⁴³ whose populations are strongly pressured by fishermen who, since they are accustomed to free access, travel along the Gulf of Guayaquil looking for crabs. These fishermen furtively enter into mangrove concessions, they do not comply with valid fishing regulations (mainly provisional banning regulations, minimum fishing sizes and prohibitions of fishing females)^{44 45}, and they use fishing gear that is not allowed, along with destructive practices such as the extraction of chelates.⁴⁶ There are also fishermen using staked nets in estuaries (which is forbidden) and fish all types of fish, including young estuarine species.

6. **Intense fishing pressure.** Most artisanal fishermen are accustomed to free access. Therefore, they try to extract the largest amount of fish and, consequently, several resources have collapsed (e. g. lobsters⁴⁷, sea cucumbers⁴⁸ and *Spondylus* clams⁴⁹). Fishing pressure is the result of (i) the absence of a policy to regulate access; (ii) the lack of restrictions on fishing and fishing efforts (e. g. the number of fishermen); (iii) the lack of compliance with fishing regulations; and (iv) limited information on population dynamics and ecology of fisheries resources.⁵⁰ In estuaries and mangrove areas, illegal and destructive practices are commonly used, such as: (i) placing nets in the entrance to branches, to trap everything that the tide produces; (ii) launching pesticides to quickly kill fish; and (iii) the use of artisanal trawl nets (called "changas") with very small eye meshes that capture juvenile fish of many species. Fishing pressure exerted on MPAs is a high threat to the biodiversity they seek to conserve and, in general, MPA managers cannot control fishing activities.
7. **Wildlife Hunting.** There are still communities that use bush meat from mangroves and coastal areas. There are towns that consume the eggs and meat of sea turtles, such as Palma Real located at the Cayapas Mataje Mangrove Ecological Reserve (REMACAM) and Pongalillo (province of El Oro)⁵¹. In the province of Esmeraldas, the capture of the *tulisio* (the spectacled caiman) (*Caiman crocodilus*), in estuaries and humid areas, is a common practice. Animals that are considered nuisance animals or pests such as birds of prey, bats, snakes and otters are also killed.

⁴² Mora, E. & Moreno, J. 2008. Estado de la pesquería del recurso concha (*Anadara tuberculosa* y *A. similis*) en la costa ecuatoriana. (Conditions of fishing of clams (*Anadara tuberculosa* and *A. similis*) in the Ecuadorian coast.) Internal Technical Report. National Fishing Institute (INP): 15 pp.

⁴³ Chalen, X. & Miranda, M. 2006. Sinopsis del estado del recurso cangrejo rojo (*Ucides occidentalis*) en Ecuador. (Summary of the Conditions of the Red Crab in Ecuador) Internal document INP. 68 pp.

⁴⁴ Agreement 016 of SRP issued on February 3rd, 2004 and Agreement 004 of SRP issued on January 13th, 2014.

⁴⁵ They use traps that are pieces of mesh placed on the entrance to the burrow, that indiscriminately capture males and females of any size. For the installation of the traps they cut mangrove roots.

⁴⁶ There are fishermen that after trapping crabs tear off crab chelae (fat legs) and dump the rest of the animal. Fat legs have high prices and a high demand for exclusive dishes in restaurants.

⁴⁷ The lobster was subject to a total ban that lasted between 1993 and 1997 to recover the population. (Agreement 075 published in Official Register 228 of July 8, 1993 and Agreement 041 published in Official Register 135 of August 25, 1997).

⁴⁸ The capture and sale of the sea cucumber (*Isostichopus fuscus*) have been banned since 1992. (Agreement 147 published in Official Register 26 of September 15, 1992). In 1992, the population was decimated by an aggressive capturing process focused on the exports of dry sea cucumbers to the Asian market.

⁴⁹ *Spondylus* clams (*Spondylus calcifer* and *Spondylus princeps*) are the object of a permanent fishing ban, which started in 2009. (Agreement 136 published in Official Register 058 of October 30, 2009). The ban's aim was to protect the remaining relict population.

⁵⁰ Coello, S. 2012. Propuesta de plan nacional de investigación Pesquera. (Proposal of the National Plan for Fishing Research) Under-Secretariat of Fishing Resources (SRP) - Ministry of Agriculture, Livestock, Aquaculture and Fishing (MAGAP). December 2012: 240 pp.

⁵¹ Herrera, M & Coello, D. 2011. Tortugas marinas en el Ecuador: playas de anidación, amenazas naturales y antropogénicas. (Sea Turtles in Ecuador: nesting beaches, and natural and anthropogenic threats) International Conservation Ecuador - National Fishing Institute Technical Scientific Bull. (It will be published soon): 26 pp.

8. **Introduced Species.** It has been reported that several species were introduced that might adversely affect the native biodiversity. In several estuaries of the Gulf of Guayaquil, tilapias are commonly harvested. There are places (e.g., "Madre Dulce" estuary of the Churute Mangroves Ecological Reserve) where fishermen informed that tilapias became predominant for the capture with drifting nets. The prevailing nature of tilapias replaces native species and changes ecosystem dynamics. Borer beetle infestation (*Coccotrypes rhizophorae*) was also found in internal branches of "Estero Salado" estuary,⁵² in Guayaquil. This beetle is native to Southeast Asia and is believed to have reached the American continent in infested propagules transported by ocean currents⁵³. It is a species that specifically attacks other plants of the genus *Rhizophora* (red mangrove) and it can produce severe illnesses that might kill persons. The insect also exists in the Galapagos Islands⁵⁴.
9. **Climate Change.** Some models have predicted significant future weather changes in the Ecuadorian coast. For example, in Figure 2b (above), the expected absolute change can be seen for up to the year 2050, regarding mean temperatures, the maximum being an increase of 4° C compared to current conditions. It is estimated that the internal areas of the Gulf of Guayaquil would be adversely affected by the effects of floods and saline intrusion. In scenarios of a sea level rise of 0.3 m and 1.0 m, 34,730 ha and 53,270 ha of mangrove would be lost, respectively⁵⁵.

While this project is not intended to address all these threats, its primary focus will be to contribute to the resolution of three major transversal causes related to threats 1, 2, 5 and 6: (i) mismanagement of the waterfront in areas of high biodiversity value; (ii) limited local capacity to efficiently manage mangrove areas; (iii) fishing pressure that deteriorates the coastal marine biodiversity.

(i) The mismanagement of the waterfront in areas of high biodiversity value. Many nesting beaches of sea turtles (green, olive ridley and leatherback turtles) are deteriorating due to the impacts of inadequate management of the waterfront. In the Ecuadorian continental area, only 22.5 km of nesting beaches are protected in the internal areas of the Machalilla National Park. There is little information on other nesting beaches. Table 1 contains the list of turtle nesting beaches, their size and the species currently found at such beaches. In general, the conservation of sea turtles in nesting beaches is affected by the alteration of beaches by tourism, infrastructure development and construction (including light pollution), nest predation by pets, stray animals and wildlife,⁵⁶ marine debris, erosion of the berm and the presence of coastal communities that consume the meat and eggs of sea turtles as bush meat. Municipalities have the competence to regulate the use of beaches and waterfronts,⁵⁷ but they usually prioritize development actions that change coastal areas, beach dynamics, and native

⁵² Ecobiotec. 2013. Informe final del inventario de flora y fauna del Estero Salado. (Final Report for Flora and Fauna Inventory of "Estero Salado") Second Result. Caracterización biológica del Estero Salado en ramales con diferentes tipos de desarrollo urbano. Biological characterization of "Estero Salado" in branches with different types of urban development. CDC-SGMC-GE-004-2012 Contract. Report drawn up for the Ministry of Environment. Guayaquil, Ecuador.

⁵³ Atkinson, T.H. & S.J. Peck. 1994. Annotated checklist of the bark and ambrosia beetles (Coleoptera: Scolytidae and Platypodidae) of tropical southern Florida. Fla. Entomol. 77: 313-329.

⁵⁴ Peck, S.B., Heraty, J., Landry, B. & Sinclair, B.J. 1998. Introduced insect fauna of an oceanic archipelago: The Galapagos Islands, Ecuador. Am. Entomol. 44: 218-237.

⁵⁵ Ministry of Environment. 2001. Vulnerabilidad-Adaptación y Mitigación al Cambio Climático. Compendio de medidas, estrategias y perfiles de proyectos de los sectores energético, forestal, agrícola, marino costero y recursos hídricos. (Vulnerability, adaptation and mitigation of climate change. Summary of measures, strategies, and profiles of projects in the energy, forestry, agriculture, coastal marine and water resource sectors.) Project ECU/99/G31 Climate Change. Quito, Ecuador: 103 pp.

⁵⁶ In San Lorenzo and La Botada beaches, it has been observed that the Sechuran fox (*Lycalopex sechurae*) is a predator of sea turtle nests.

⁵⁷ This power was established in the Organic Law on Territorial Organization, Autonomy and Decentralization (COOTAD). It was published in the Supplement of Official Register 303 dated October 19, 2010.

biodiversity. For example, they set up bars and restaurants for tourists, construct jetties and seawalls, carry out sand mining, and undertake the urbanization of waterfronts for vacation homes and tourist infrastructure (e.g., hotels, parking) without taking into account natural sediment dynamics and waterways.

Table 1. List of nesting beaches of sea turtles of the Ecuadorian continental coast.⁵⁸

Beach	Size of the beach	Registered species
Tortuguita	Small	CM, EI
Frailes	Large	EI
Bálsamos	Small	CM
Playita	Small	EI
Salango	Large	CM
Puerto Rico – Ayampe	Very large	
Tonsupa	Large	CM, EI, LO
Chevele	Large	EI, CM, DC
Atacames	Very large	CM, EI
Quingue	Large	EI, LO
Mompiche	Very large	LO, EI
Same	Large	LO, CM, EI
Sua	Large	LO
Galera	Large	CM, LO, EI
Tongora	Small	
Puerto Cayo	Very large	CM, EI
Machalilla	Large	EI
Puerto López	Large	CM, DC, EI, LO
San Lorenzo	Large	LO, CM, DC
	Very large	Unknown
La Entrada – Olón		
Montañita- San Pedro	Very large	CM, EI
Playa Rosada	Small	Unknown
Palmar	Small	Unknown
Jambelí – Monte Verde	Large	Unknown
Mar Bravo- Punta Carnero	Very large	Unknown
Anconcito	Very large	Unknown
Chanduy – Pto. Engabao		EI
Engabao- Playas	Very large	Unknown
Playas- Data de Villamil	Very large	CM
Data de Posorja	Small	Unknown
Puná	Large	CM, LO

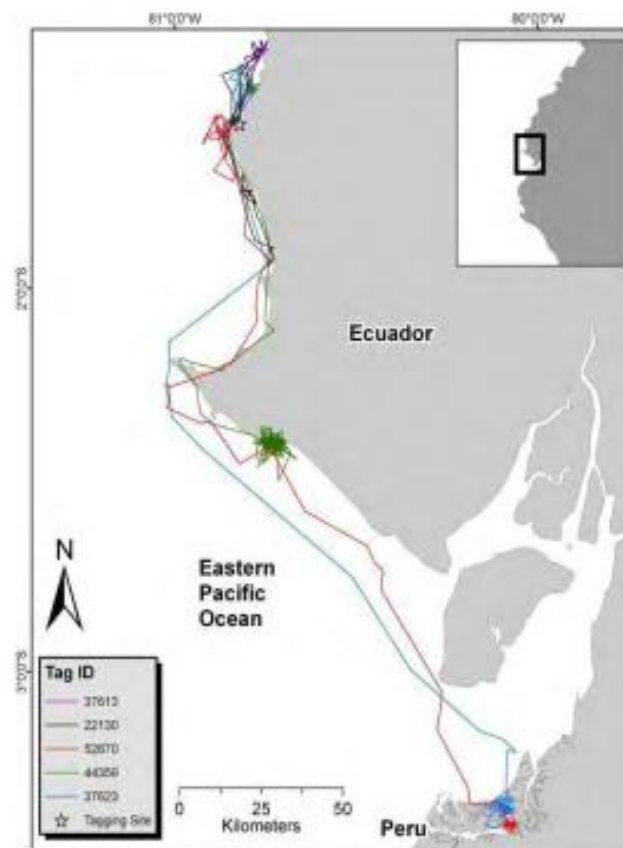
(ii) Limited local capacity to efficiently manage mangrove areas. Mangrove concessions to traditional users were conceived as a tool for conservation of mangrove coverage areas, but it was mainly developed as a fisheries management tool. The main problem that prevents proper management of mangrove concessions is poor organizational capacity, which is affected by (a) the lack of internal regulations for the proper utilization of fishery resources (including penalties for violators); (b) the weakness regarding the establishment of community control and monitoring systems that are supported by the supervisory authorities; and (c) the inability

⁵⁸ Abbreviations: Size of the beach. Very large = very large (over 5 km). Large = large (from 2.1 to 5 km) M = mid-sized (from 1.1 to 2 km) Small = small (from 101 m to 1 km). Very small = very small (less than 100 m). Species: CM = *Chelonia mydas*, DC = *Dermochelys coriacea*, EI = *Eretmochelys imbricata*, LO = *Lepidochelys olivacea*. Source: Peña, M., Muñoz, P. & Baquero, A. 2008. Tortugas marinas en la costa del Ecuador. (Sea turtles of the coast of Ecuador) Estudio de caso. (Case Study) Machalilla National Park. Equilibrio Azul. 19 pp.

of the organization to cover the running costs to keep the concession (e.g., fuel) and make priority investments (e.g., renewal of boat engines).

A better management of concessions could contribute to preserving ecological functions and protecting native biodiversity species. For example, the crab, along with being the food of other species (for example, the washing bear), it is also a basic component of the recycling of organic matter of estuaries.⁵⁹ Similarly, the coastal crocodile and the hawksbill turtle live in mangroves and require protection. The coastal crocodile was decimated⁶⁰ and there are small isolated groups that require protection. Additionally, it has been determined that, in Ecuador, hawksbill turtles follow routes that are very close to the coast during their post-nesting migration, while travelling to forage areas. And it was established that adult hawksbill turtles use mangroves as their main forage habitat (figure 2)⁶¹.

Figure 2. Migration route after spawning of two female hawksbill turtles, in Ecuador. Inter-American Convention for the Protection and Conservation of Sea Turtles



⁵⁹ Twilley, R.R., Pozo, M., García, V.H., Rivera-Monroy, V.H., Zambrano, R. & Boderó, A. 1997. Litter dynamics in riverine mangrove forests in the Guayas River estuary, Ecuador. *Oecologia* 111:109-122.

⁶⁰ Crocodiles had a high level of exploitation. Their fat was used as a medical substance, their meat as food, their teeth for making necklaces and decorations, and skin as luxury items. It is estimated that, between 1930 and 1950, around 200,000 leathers were obtained that correspond to around 200,000 hunted crocodiles.

Fiallos, A, Zambrano, R. & Fritts, T, 1979. Estudios básicos sobre el cocodrilo (*Crocodylus acutus*) en la Cuenca del Río Guayas, Ecuador (Basic Studies on the Crocodile of the basin of the Guayas River, Ecuador.) Ministry of Agriculture and Livestock - U.S. Department of Interior Fish and Wildlife Service. (Non-published technical report).

⁶¹ Gaos, A.R., Lewison, R.L., Yañez, I.L., Wallace, B.P., Liles, M.J., Nichols, W.J., Baquero, A., Hasbún, C.R., Vasquez, M., Urteaga, J. & Seminoff, J.A. 2011. Shifting the life-history paradigm: discovery of novel habitat use by hawksbill turtles. *Biol. Lett.* doi:10.1098/rsbl.2011.0603.

The intense pressure of artisanal fishing on MPAs. The uncontrolled extraction of fish degrades biodiversity and undermines the role and effectiveness of MPA management. Managers of protected areas have failed to contain the pressure of fishermen who traditionally used areas that are within MPAs or the raid of external fishermen who are accustomed to free access. The network of marine and coastal protected areas should help to sustain fisheries, but MAE has little experience in fisheries management in protected areas⁶². Additionally, control and monitoring systems of MPAs are fragile and there is a limited coordination with other control bodies (such as SRP and Port Captaincies).

To summarize, there are severe threats that place at risk the abundant and valuable coastal marine biodiversity of Ecuador, whose importance is not only local but also global. In this context, the main problems that this project plans to address are:

1. The mismanagement of the waterfront in areas of high biodiversity value, which affects the nesting of turtles.
2. The limited local capacity of concession grantees to efficiently manage mangrove areas.
3. The intense pressure of artisanal fishing on MPAs.
4. Weak implementation of an updated regulatory framework that supports the actions related to integrated coastal management

1.1.1 Justification

a) Baseline initiatives and projects, including co-financing sources, and remaining barriers

Waterfront management.

To protect the rich biodiversity, the government has created a network of 16 protected marine and coastal areas (MPAs) in continental Ecuador⁶³. MPAs are part of the Natural Heritage Areas of the State (PANE), which is one of the constitutive elements of the National System of Protected Areas (SNAP) managed by the MAE. The MPAs network covers 332,968 hectares under different management categories (Table 2, Figure 3), and constitute 5.2% of the territorial sea of continental Ecuador (6.353.800 hectares)⁶⁴. One of the most outstanding areas is Machalilla National Park, which was created in 1979 and has 56,184 hectares of land area and 14,430 hectares of marine area. One of the justifications for its creation was the protection of the main nesting beaches of sea turtles known at that time. The park has 22,570 km of sandy beach and 42,500 km of rocky beach.

Recently MAE is applying a new category for the declaration of MPAs, “national recreation area”⁶⁵, which includes the recreational use of the beach and the conservation of valuable elements of biodiversity. It is defined as an area of 1000 hectares or more where there are mainly scenic beauty, recreation and tourism resources in a natural environment, easily accessible from populated centers. The MAE has had promising results with the management

⁶² There are fishing activities at all MPAs of the Ecuadorian continent, but very little experience on their management. There is very basic experience at the Churute Mangrove Ecological Reserve (regarding the capture of red crabs) and at the San Francisco Galera Sea Reserve (as related to the capture of lobsters).

⁶³ Except from the Galapagos National Park and Galapagos Marine Reserve, which are in the Galapagos archipelago located at 972km from the mainland coast of Ecuador.

⁶⁴ In June 2016, Ecuador ratified its secession to the UN Convention on the Law of the Sea (UNCLOS), which structured adjacent sea in 12 miles of territorial sea and 200 miles of exclusive economic zone.

⁶⁵ LFANVS

of Playas de Villamil National Recreation Area⁶⁶, covering 2,478 hectares of mangrove remnant areas, located in an area of mass tourism (Playas canton, Guayas province).

Table 2. Marine protected areas of continental Ecuador⁶⁷.

Province	Protected Marine Area	Marine area (hectares)	Land area (hectares)	Total area (hectares)	Creation date (dd/mm/yy)	Agreement or Resolution
Esmeraldas	Cayapas Mataje Mangrove Ecological Reserve	51,300.00	0.00	51,300.00	26/10/1995	DE-052
	Estuary of Esmeraldas River Mangrove Wildlife Refuge	242.58	0.00	242.58	13/06/2008	A-096
	Estuary of Muisne River Mangrove Wildlife Refuge	3,173.00	0.00	3,173.00	20/03/2003	A-047
	Galera-San Francisco Marine Reserve	54,604.00	0.00	54,604.00	31/10/2008	A-162
Manabí	Isla Corazón and Islas Fraguatas Wildlife Refuge	700.00	0.00	700.00	11/03/2002	A-133
	Machalilla National Park	23,095.00	33,089.00	56,184.00	26/07/1979	A-322 A-376
	Pacocha Marine and Coastal Wildlife Refuge	8,500.00	5,045.00	13,545.00	09/02/2008	A-38
Santa Elena	El Pelado Marine Reserve	13,101.35	0.00	13,101.35	24/08/2012	A-118
	Puntilla de Santa Elena Fauna Production Reserve	47,274.00	173.00	47,447.00	23/09/2008	AI-1476
Guayas	Churute Mangrove Wildlife Refuge	35,000.00	15,082.00	50,082.00	26/09/1979	A-22 A-376
	Playas National Recreation Area	2,478.12	0.00	2,478.12	05/09/2011	A-163
	El Morro Mangrove Wildlife Refuge	10,130.00	0.00	10,130.00	09/12/2007	A-266
	El Salado Mangrove Fauna Production Reserve	10,635.12	0.00	10,635.12	15/11/2002	A-142
	Isla Santay and Isla del Gallo National Recreation Area	0.00	2,214.00	2,214.00		A-021
El Oro	Isla Santa Clara Wildlife Refuge	46.00	5.00	51.00	06/03/199	A-83
	Arenillas Ecological Reserve	2,800.00	14,282.00	17,082.00	16/05/01	A-001

MAE is also implementing the “National Program for Solid Waste Integrated Management” (PNGIDS), focused on promoting the management of solid waste in the municipalities of Ecuador. The two main goals of this Project are (i) that 70% of the country’s population dispose of waste in a sanitary landfill technically managed by 2014, and (ii) to eliminate open dumps in all municipalities of the country by 2017. Through the PNGIDS, MAE has supported the design of sanitary landfills for Manta and Santa Elena municipalities. The PNGIDS also organizes annual beach cleanup events⁶⁸ to raise awareness among residents and visitors about marine debris and its impact on biodiversity of high conservation value such as sea turtles.

At local level, some Decentralized Autonomous Governments (GADs) are more sensitive to the conservation of natural areas and support the work of the MPAs. For example, the Provincial Government of Guayas created the “provincial conservation area system” which aims to declare, during the 2012-2016 period, at least 10,000 hectares as provincial conservation areas⁶⁹. Some municipalities have begun to regulate activities in their beaches. In 2013, the Municipality of Salinas issued the “Regulatory Ordinance of Productive

⁶⁶ The protected area was created through Agreement 163 (published in the Official Gazette Supplement of February 1st, 2013), and comprises 2,478.12 hectares of beaches and mangrove remnants.

⁶⁷ Abbreviations: A = Ministerial Agreement. DE = Executive Order. AI = Inter-ministerial Agreement

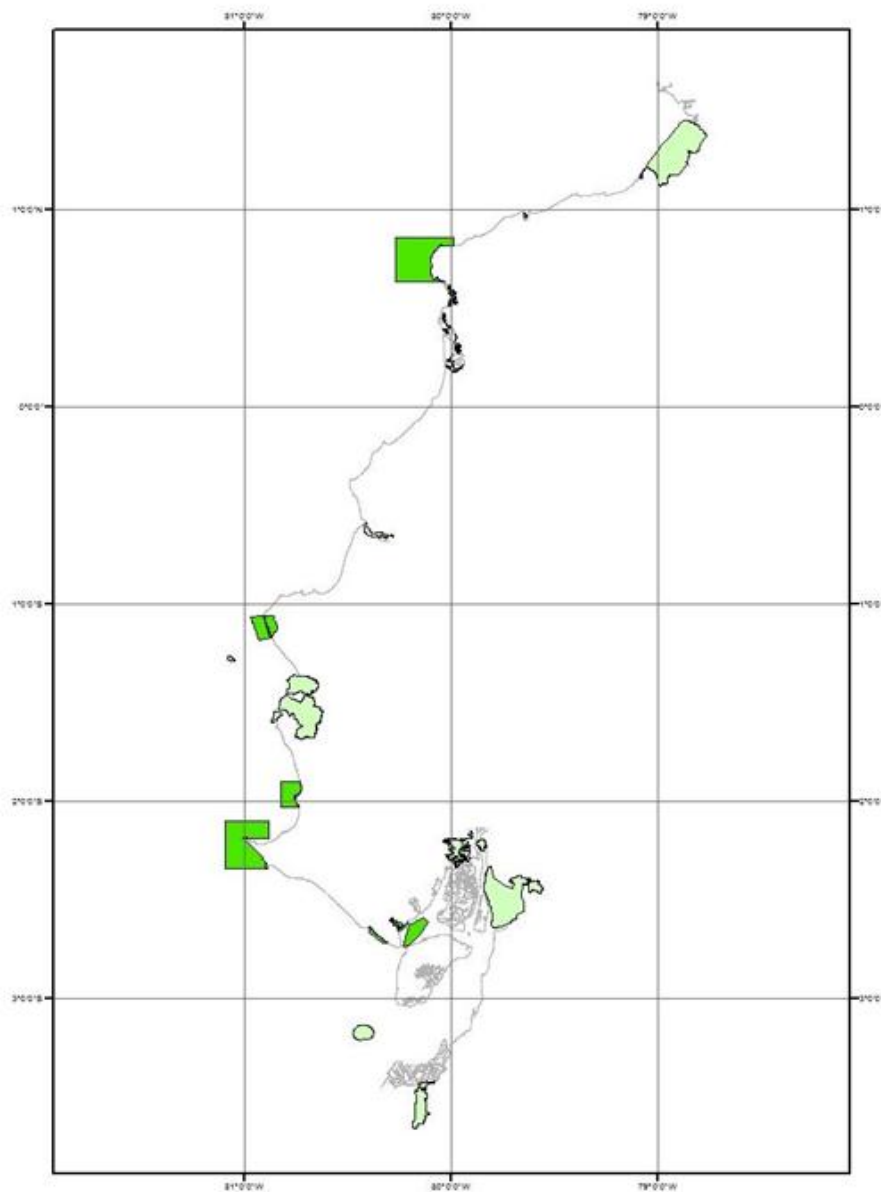
⁶⁸ In peak seasons of coast and highlands holidays (i.e., February and August), and in the International Beach Cleanup Day.

⁶⁹ Albán, M., S. Suarez & J. Camacho. 2012. Planificación Estratégica del Sistema de Áreas de Conservación del Gobierno Provincial del Guayas (Strategic Planning of Areas Conservancy System of the Provincial Government of Guayas) 2012 – 2016. Final Advisory Report. Environment Directorate of the Provincial Government of Guayas, Ecuadorian Center of Environmental Law, and The Nature Conservancy. Guayaquil. 112 pp.

Activities and Integrated Management of San Lorenzo, Chipipe, La Milina, Puerto Lucia, and Punta Carnero beaches of Salinas canton in the Province of Santa Elena⁷⁰. This ordinance includes topics such as vehicles circulation, pet management and beach cleaning. The municipality of Puerto Lopez is currently working on gathering information regarding the status of solid waste, with emphasis on closure of the current sanitary dump.

Figure 3. Protected areas created in the marine area of the continental coast of Ecuador.

From north to south (following the coastline): Cayapas – Mataje Mangrove Ecological Reserve, Galera San Francisco Marine Reserve, Estuary of Muisne River Wildlife Refuge, Estuary of Esmeraldas River Wildlife Refuge, Corazón and Fragatas Islands Wildlife Refuge, Machalilla National Park, Pacoche Wildlife Refuge, El Pelado Marine Reserve, Puntilla de Santa Elena Fauna Reproduction Reserve, Playas de Villamil National Recreation Area, El Morro Mangrove Wildlife Refuge, El Salado Mangrove Fauna Reproduction Reserve, Isla Santay and Isla del Gallo National Recreation Area, Churute Mangrove Ecological Reserve, Santa Clara Wildlife Refuge, and Arenillas Ecological Reserve.



⁷⁰ Published in the Official Gazette of the Autonomous Municipal Government of Salinas Canton, Issued on March 6th, 2013.

Barrier 1. Population does not fully understand the value of the coastal front biodiversity. The beach is perceived as an empty space that can be used for recreation and commercial exploitation (e.g. rental of sunshades, selling foods and crafts). Local people do not perceive that the beach is an environment rich in biodiversity, which is why the conservation of natural areas is not integrated into the daily-life routines of beach users.

Barrier 2. People do not know the fundamental role of nesting beaches for sea turtle survival. Local people do not realize that, because of the critical situation of turtle populations, the survival of each nest is very valuable considering also that turtles who were born in that beach will return to nest in the same place. There are no projects or programs focused on protecting nesting beaches outside Machalilla National Park.

To address these barriers, authorities seek to establish management mechanisms that reconcile development needs with biodiversity conservation. Based on the finding that turtles nest in 32 beaches of the Ecuadorian coast (Table 1)⁷¹, there are four areas not yet protected under the SNAP: (a) the section between San Mateo and San Lorenzo (ca. 20 km in Manabí province); (b) the section between Salango and San Pedro (ca. 46 km between southern Manabí province and northern Santa Elena province); (c) the section between Engabao and Playas (ca. 22 km in Guayas province); and (d) the section between Subida Alta and Agua Piedra in Puná Island (ca. 11 km in the province of Guayas). Table 3 shows the description of these beaches with regard to turtle nesting areas.

To this end and in coordination with this Project, MAE, besides managing all the MPAs, during the next four years, will allocate resources for the development of the technical document on alternatives for MPAs management, draft ministerial agreements, and monitor and socialize the creation process of new MPAs, including the proposal to create the mangrove ecosystem area in the Portoviejo River estuary. The new MPAs should prepare a management plan, draft ministerial agreement, and undertake monitoring and socialization activities. As part of the management plans, the MAE will invest funds in restoration activities and sustainable productive enterprises in Chone River estuary, as well as in conservation activities in the middle and lower basin of Ayampe River, which provides Puerto Lopez canton with hydrological resources. To support monitoring and control, they will also deliver a boat and motor to the Mangrove Guides Association.

Additionally, MAE will carry out a benthic and ecosystem mapping and subtidal and intertidal quantitative inventories of marine biodiversity in 6 MPAs and 4 areas of possible expansion. These activities will provide baseline information on biodiversity status in the area, and will motivate the National Environmental Fund⁷² (FAN) to include resources to support the new MPAs⁷³ in Protected Areas Fund (FAP) programming. MAE's total investing is USD1,862,873.

⁷¹ Peña, M., Muñoz, P. & A. Baquero, 2008. Tortugas marinas en la costa del Ecuador (Sea Turtles in the Coast of Ecuador). Case Study. Machalilla National Park. Blue Balance. 19 pp.

⁷² FAN is a NGO that manages several funds for nature conservation and manages the FAP which aims to diversify the funding sources for public protected natural areas, providing stable financial resources in the long term. FAP provides sustainable funding for basic operating expenses in PANE protected areas.

⁷³ FAP delivers USD 89,000 monthly to each protected area to cover basic operating costs.

Table 3. Characteristics of each of the priority areas for protecting nesting beaches of sea turtles.

Priority area	Beach length / area (hectares)	Conservation value	Threats and their main causes to the conservation of biodiversity	Nearby towns	Institutions involved in management
Sector: San Mateo - San Lorenzo	20.07 km/3,717 ha	Nesting beaches of green, olive riddle and leatherback turtles.	Marine glitter, mass sun and beach tourism in nesting seasons (December-March), inappropriate management of domestic animals and collision with boats.	San Mateo. Main activity: fishing. San Lorenzo. Main activity: fishing and moderate tourism	UCV through the Harbormaster of Manta, Municipality of Manta, Ministry of Environment, Fisheries Resources Undersecretariat, Universities, NGOs, tour operators and users of fishery resources.
Sector: Salango - San Pedro	46 km/8,519 ha	Nesting beaches of green and olive ridley turtles	Beaches alteration, pollutants discharge, waste from inland sources mainly in high sun and beach tourism seasons, intensive tourism in nesting season (December-March), inappropriate management of domestic animals and collision with boats.	Towns: Salango, Puerto Rico, La Tunas, La Entrada, La Rinconada, Curia, Olón, Montañita, Manglaralto Simón Bolívar Valdivia and San Pedro. Main activities: sun and beach tourism and fishing as secondary activity.	UCV through the Harbormaster of Salinas Municipality, Ministry of Environment, Fisheries Resources Undersecretariat, Universities, NGOs, tour operators and users of fishery resources.
Sector: Engabao/Playas	22 km/4,074 ha	Nesting beaches of green and olive ridley turtles	Beaches alteration, accelerated advance of the urban frontier, inappropriate management of domestic animals.	Towns: Playas and Engabao. Main activity of Playas canton: tourism Main activity of Engabao community: fishing with a growing interest to develop major tourist and infrastructure projects.	UCV through the Harbormaster of Guayaquil port, Municipality of Playas, Parish Board of Engabao, Ministry of Environment, Fisheries Resources Undersecretariat, Universities, NGOs, tour operators and users of fishery resources.
Sector: Subida Alta/Agua Piedra (Puná Island)	11.5 km/2,129 ha	Nesting beaches of green and olive ridley turtles	Marine glitter, inappropriate management of domestic animals	Towns: Cauchiche and Puná. Sun and beach tourism with growing interest. Island system whose closest point to the mainland by water is Posorja (7.5km).	UCV through the Harbormaster of Guayaquil, Municipality of Guayaquil, Parish Board of Puná, Parish Board of Posorja, Ministry of Environment, Universities, NGOs, tour operators and users of fishery resources.

Conservation International has supported the MPAs management in Ecuador. In Phase 3 of ETPS, CI-Ecuador supported the strengthening of the management of five MPAs (REMGSF, RVSMCP, REVISIMEM, PNM and REMACOPSE), and provided specific resources to support the creation of two new protected areas (RMEP, ANRPV). Support included basic fishery management in the REMGSF. During phase 4 of ETPS, CI-Ecuador will provide technical assistance, training and equipment to support: (i) the process of creating new MPAs; (ii) the preparation of the relevant management plans; and (iii) capacity building of municipalities in ICM for a total amount of USD 300,000.

WildAid will contribute with technical assistance, training and equipment to design the control and oversight systems of the four new MPAs, and to incorporate these new aspects in the municipal coastal management ordinances (USD 150,000). Guayas GADP will invest USD 100,000 in promoting the declaration of the Gulf of Guayaquil as a Biosphere Reserve.

Management of mangrove concessions

Mangrove concessions have been a useful tool to maintain the forest cover. Concessions are actually a collective rights scheme around Territorial Use Rights in Marine Fishery (TURF)⁷⁴, which have been mainly useful for crab and dark clam fishermen/women. In 2008 the performance of mangrove concessions was evaluated⁷⁵, finding that not all concessions are developed similarly. Some concessionaries failed to overcome the initial barriers for implementation; however, those who could get the concession obtained important social and economic benefits⁷⁶. At the beginning of 2014 there were 49 concessions (59,000 hectares), but 12,500 hectares of mangrove correspond to expired concessions, especially in the REMACAM.

The most successful mangrove concessionaries have developed empirical mangrove management schemes based on Rights-Based Management (RBM). There are 17,000 hectares of concessions that implement empirical RBM schemes. The most remarkable cases are 6 de Julio, Balao and Nuevo Porvenir in crab management, and Costa Rica in dark clam management. Among other things, these groups established a system for collecting fishing information, as well as internal regulations to limit fishing effort and minimum capture size.

The MAE takes specific actions to enhance the management of mangrove concessions, since the recovery of these areas requires long-term *in situ* work. Moreover, in recent years there have been efforts to support the creation of new concessions by the Sustainable Coasts and Forests project of USAID. There are several groups interested in getting concessions, especially within MPAs. In the 2010 update of the regulations for mangrove concessions, the possibility of granting custody areas within protected areas was excluded⁷⁷. However, it is

⁷⁴ Christy, F.T. 1983. Derechos de uso territorial en las pesquerías marítimas: definiciones y condiciones (Territorial use Rights in Marine Fishery: definitions and conditions). FAO. Doc.Tec.Pesca 227: 11 pp.

Marschke, M., Armitage, D., Van An, L., Van Tuyen, T. & Mallee, H. 2012. Do collective property rights make sense? Insights from central Vietnam. *International Journal of the Commons* 6(1): 1–27.

Gallardo, G., W. Stotz, J. Aburto, C. Mondaca, & Vera, K. 2011. Emerging commons within artisanal fisheries. The Chilean territorial use rights in fisheries (TURFs) within a broader coastal landscape. *International Journal of the Commons* 5(2):459–484.

⁷⁵ Coello, S., D. Vinueza & R. Alemán. 2008. Evaluación del desempeño de los acuerdos de uso sustentable y custodia de manglar de la zona costera del Ecuador (Performance Assessment of Agreements on Mangrove Sustainable use and Custody in the coast of Ecuador). Ministry of Environment of Ecuador – Conservation International – International Union for Conservation of Nature (IUCN) – IUCN World Commission of Protected Areas – Program to support the decentralized management of natural resources in the three provinces of northern Ecuador (PRODERENA) – Ecobiotec. July 2008: 52pp. + 4 Figures + 17 Tables + 5 Appendices + 29 maps.

⁷⁶ Coello, S. & Altamirano, M. 2007. Buenas Prácticas de Aprovechamiento y Uso de Recursos Costeros en Ecuador. Una guía para su sistematización y elementos a considerar para impulsarlas (Best Practices on Coastal Resources Exploitation and Use in Ecuador. Systematization Guide and Elements to Consider for their Promotion). AVINA - ECOBIOTEC - ECOCOSTAS – Ministry of Environment – Conservation International. Ecuador: 129 pp.

⁷⁷ Agreement 129 (published in the Official Gazette 283 of September 21st, 2010), Article 7c.

recognize that well-managed concessions can be an important support for the control and monitoring of MPAs. A very interesting case is REMACH, where there are 17 well-organized groups of crab fishers (1300 fishermen), who have traditionally worked within the reserve and catch large amounts of crab (about 3,180,000 units of male crabs per year) which are mainly sold in Guayaquil. REMACH management has allocated areas to each group and has reached informal agreements with crab fishermen, but cannot deliver concessions (which are a legal instrument that sets stronger commitments between the parties) despite the interest and willingness of crab fishermen.

Regarding monitoring and surveillance, community control systems of some concessions, depending on their level of development, have achieved to discourage external fishermen entering the area. Successful concessions have achieved to catalyze the support of maritime authorities in patrolling and arresting infractors. Mangrove concessionaries also invest in the conservation of areas within their custody. Investments are mainly in kind (e.g., time allocated to patrolling and monitoring of catches), although they also spend money in fuel purchasing and maintenance of boats and outboard motors. The MAE has triggered positive incentives for further conservation activities by providing small funds for such investments. Some concessionaries have also been supported by small grants programs (e.g. USAID), to fund this type of investments.

The Humanist Institute for Cooperation with Developing Countries (HIVOS) develops, since January 2013, the regional Project “Recovery of Dark Clam as a Resource for Food Security of picker families in communities of three Pacific countries” (UE DCI Food 2012/301/117), which is funded by the European Union. In Ecuador, the Project is implemented by a partnership between the Federation of Artisanal Mangrove Products Pickers (FEDARPON) and the Federation of Artisanal Mangrove Bio aquatic Products Pickers (FEDARPROBIM), in 11 communities within the REMACAM. The Project consists of four components: 1) Strengthen organizations to advocate for mangrove conservation, 2) Support the regulation of clam sustainable use, 3) Generate and systematize knowledge, and 4) Disseminate information to raise awareness on the importance of mangrove products. The project contributes to strengthen local capacities to advocate for mangrove conservation, especially of clam, as a source of food security and support the development of education and training processes, collective rights and territory management that enable laying local foundations for social viability for the management of mangrove concessions that are within the REMACAM. At the national level, the Project enables a more direct dialogue between mangrove users for the development of public policies aimed to ensure the sustainability of conservation actions, sustainable use, and proper monitoring and evaluation of project implementation.

Barrier 3. Concessionaries have difficulties in taking full control of concessions.

Not all mangrove concessions have reached full management of the areas under their custody. On the one hand, there are 12,500 hectares of expired concessions located mainly within the REMACAM. In many concessions there are still deficiencies in concessionaries’ organization, as well as rudimentary control and surveillance systems, in addition to insufficient support from infringement control authorities.

Barrier 4. Concessionaries have limitations to invest in capital goods or even cover operating costs. They have difficulties to make capital investments, for example in boats and motors for patrolling or telecommunication systems.

Barrier 5. Concessions management does not include the protection of high value biodiversity conservation. The management of mangrove concessions is primarily focused on fishery resources collection, without incorporating aspects of high value biodiversity conservation, such as coast crocodiles, otters and sea turtles.

Concessionaries have little knowledge about the conservation status of key elements of mangrove biota. In the REMACAM and some sectors of the Gulf of Guayaquil, some communities still use sea turtles as bushmeat.

To address barriers 3 to 5, the MAE will provide public resources to strengthen, through the SGMC, the already existing mangrove concessions, to expand the coverage of the concessions that have expressed their interest, and to create new concessions. A key action will be the elimination of the restriction to grant mangrove concessions within MPAs⁷⁸, and will implement control and surveillance activities.

A financial mechanism to provide direct support to concessionaries for the protection of mangrove under their custody and the associated biota will also be implemented. This incentive has been called “Socio Manglar” (Mangrove Partner) and rises from the implementation of the “Socio Bosque”⁷⁹, (Forest Partner) experience implemented since 2008, which includes the direct delivery of financial incentives to owners of native forests, moorlands and other native vegetation, as a compensation for the conservation and protection of these areas⁸⁰. The Socio Manglar mechanism is under final development and is expected to start operation in late 2014 with an investment of approximately USD 1,000,000 per year (USD 4,000,000 until 2018). Finally, the MAE will perform a diagnosis about the relationship between climate change and coastal marine resources, identifying vulnerabilities to possible impacts of climate change in the coastal marine profile. Altogether MAE will invest USD 7,499,900

HIVOS will be responsible for implementing activities to enhance the concessions that are within the REMACAM. They will also conduct awareness and communication campaigns addressing the clam consuming public, restaurant owners and intermediaries, in order to position the importance of mangrove as provider of resources, and the need to promote their responsible consumption (USD 420,000)

The MAGAP, through the Territorial Link Unit of Esmeraldas of the Rural Good Living Program⁸¹, will invest USD 1 million in strengthening of practices of sustainable use and development of productive activities derived from the resources of mangroves by organizations using this ecosystem, as means to combat poverty in the area. Same activities will be promoted by the United Nations High Commissioner for Refugees (UNHCR), who will conduct support actions for the development of productive alternatives of fishery products of the mangrove in the border area with Colombia (USD 77,000 per year).

CI-Ecuador will provide support for the other concessions, including the expansion of three concessions, the update of mangrove concessions in El Oro province and the creation of four new concessions in Guayas province, based on what we have learned from this project. CI will also provide technical assistance for management of the concessions and equipment for control and surveillance activities by the concessionaries (USD 654,702).

GIZ (German Technical Cooperation) has completed negotiations with the Government of Ecuador for the implementation of their “Climate Change, Biodiversity and Sustainable Development Program” (ProCamBío). Their overall activity plan shows they will invest USD

⁷⁸ Announced by the Natural Patrimony Undersecretariat in the project design workshop of March 18th, 2014

⁷⁹ Agreement 169 published in the Official Gazette 482 of December 5th, 2008.

⁸⁰ Socio Bosque is financed through fiscal resources, international cooperation and other contributions. Participation in the program is voluntary, interested parties sign a 20 years agreement.

⁸¹ The Rural Good Living Program is an initiative of the MAGAP and the International Fund for Agricultural Development (IFAD).

250,000 in actions related to mangrove concessions strengthening. The starting phase of this Project will match with the fine-tuning of GIZ activities for the 2014-2016 period.

The Decentralized Autonomous Government of the Province of Guayas has committed an investment of USD 200,000 to support concessions in the province of Guayas and especially “Cerrito de los Moreños” concession and RAMSAR site “Mangroves of Interior Estuary of the Gulf of Guayaquil Don Goyo”⁸².

Moreover, mangrove concessionaries make daily investments in concessions care. During the phase of information collection for this Project, it was estimated that Puerto Roma concessionaries invest approximately USD 10,000/year in kind and USD 12,600 in cash to manage an area of 232 hectares (approximately USD 97 per hectare per year). In broad terms, mangrove concessionaries in Guayas and Esmeraldas invest, as a whole, USD 1,741,436 and USD 847,660, respectively.

Through the *UN REDD Program – Output 1 National Forest Monitoring System*” UNJP/ECU/083/UNJ, which supports the elaboration of the land use map of the country, FAO will support the identification, through RAPIDEYE images, of actual mangrove areas in continental Ecuador. A dendrologic guide will also be developed to facilitate the identification of forest and shrub species of mangrove forests along the country’s coastal line. This information will complement the activities of the total mangrove area research and the biodiversity inventory (USD 75,540.00)

Artisanal fisheries in mangrove concessions and MPAs

Historically, fisheries policy in Ecuador has been implicitly of open access. Fishing regulations have always been focused on closures, setting limits to the minimum size of the fish caught and to fishing gears, but no limits have been set to catch volume or fishing effort. Mangrove concessionaries developed empirical RBM systems, but Fishing Authorities have not capitalized these lessons learned. Just in 2013, the SRP began to introduce catch volume limits and fishing effort limits of two new fishing resources: hake⁸³ (*Merluccius gayi*) and common eel⁸⁴ (*Ophichthus remiger*). Current regulations of dark clam and crab do not include catch and effort limitations. Fishing in MPAs is competence of the MAE, and the REMACH is the area of most work in this regard, where crab fisher organizations working within the reserve are being involved and organized around an informal RB fisheries management system (a TURF scheme based on the experience of mangrove concessions).

The National Fisheries Institute (INP as per Spanish acronym) performs research on some mangrove species, in order to assess their use potential, diversify production, promote the development of the fishing industry and achieve optimal and rational use. Since 2011, INP has encouraged the participatory monitoring of mangrove crab to know its population density and reproductive aspects. Comparison of results of years 2011 and 2012 with the 2013, indicates that the crab population declined in abundance. This resulted in an adjustment to the dates of the provisional ban on its collection (twice a year). For 2014, the provisional ban was established between 1 and 31 March, period identified as one with the higher percentage of

⁸² Comprises an area of 15,337 hectares located in the inner estuary of the Gulf of Guayaquil which was declared RAMSAR site on February 2nd, 2013. In the RAMSAR site is located the Cerrito de los Morreños concession.

⁸³ Agreement 018 signed on April 16th, 2013. The agreement limits the industrial fleet to 30 boats and sets an annual fishing quote of 850 tons.

⁸⁴ Agreement 202 signed on November 7th, 2013. The agreement limits the industrial fleet to 10 boats and limits fishing efforts to 900 pots per boat.

females ovate. INP works through the crab program, which collaborates with crab fishermen associations.

Since 2013, the National Institute of fisheries of Ecuador (INP), executes the project “*Estimation and projection of the resources fishery-aquaculture for the economic and social strengthening of the Ecuadorian fishing sector 2013-2018*” funded by the National Ministry of science and technology (SENECYT), whose investment is USD10 million. The study covers the areas exploited by artisanal and industrial fisheries along the entire coastal line, with emphasis on the area within eight nautical miles from the mainland coast, and is focused on the analysis of the population status of traditionally exploited fishery resources, diagnosis of ecosystem and its relationship with the organisms that are developed, as well as parameters allowing for the evaluation of the use of fishing gear and propose their optimisation. The project also seeks to generate and propose new alternatives for environmental friendly aquaculture production, and the development of techniques of farming of marine species of commercial interest.

Barrier 6: Fishing pressure is serious and, in current conditions, mangrove concessionaries and MPAs managers cannot control it.

Barrier 7: MPAs managers do not have expertise and tools to manage fisheries. The MAE has little experience in fisheries management. The oldest MPAs (i.e., PNM and REMACH, created in 1979), have not been able to control their fisheries yet, and there are no formal instruments setting commitments. In the MAE there are divided views about formalizing the allocation of these spaces through mangrove concessions. In addition, MPAs control and surveillance systems are fragile and rudimentary, and there is little coordination with control entities (e.g., SRP, Harbormaster).

To address barriers 6 and 7, CI-Ecuador will provide technical assistance and training to strengthen fisheries management systems of mangrove concessions. In coordination with this project, CI-Ecuador will be responsible for the design and implementation of the lobster management system at RMEP (output 2.1.1.), design of dark clam fisheries baseline in REVISMEM (output 2.1.2), and will support the fishing management experiences at REMGSF and REMACH with technical assistance and equipment (output 2.1.3). CI will also provide funds to support MAE in monitoring of the implementation of fishery management plans and will publish each plan and upload it in SIMCE the digital versions (USD 477,351)

Work with lobster and bearded brotula in the REMGSF will be complemented by field actions carried out by Nazca Institute (USD 100,000).

The MAE will work in the design of fisheries management systems, their approval and monitoring, as well as in the monitoring of fisheries management plans (USD 136,200).

Additionally, REMACAM, REMGSF and REMACH receive funds from the FAP⁸⁵ (FAN will contribute with USD 498,531 in kind for managing these MPAs), and it is expected that towards the end of the project, REVISMEM and RMEP will also be included in the FAP.

WildAid will provide technical assistance for the development of robust control and monitoring system through a contribution of USD 75,000.

⁸⁵ FAP includes 30 protected areas, of which eight are MPAs and three are part of this project: REMACAM, REMGSF, and REMACH. FAP expects to fund all PANE areas by 2016.

In the third and fourth years of the Project, HIVOS will support the development of dark clam management system in the REMACAM, on the basis of the experiences developed in the REVISEMEM and the concessions during the first two years of the project (USD 80,000)

Through its SENEYCYT project, INP performs surveys on landings of Pacific bearded brotula, red crab, dark clam and octopus in specific areas of the coast of Ecuador Manta, Puerto López and Santa Rosa (bearded brotula), Puerto Bolívar, Puerto Jelí, Naranjal, Balao, Churute (crab and clam) y Anconcito (pulpo). Base on the date, INP will recommend different measures of management of these resources. Pacific bearded brotula and Octopus resources are not yet subject to fisheries management in the country. The information generated by the INP, along with the data coming from the current project, will determine the state of health of the populations of the mentioned resources and strengthen the management of these resources in the mangrove ecosystem and the AMPs of the continental Ecuador (USD263,787)

Finally FAO will provide USD 175 000 in in-kind co-financing supporting capacity building in fisheries rights based management and the conservation of biodiversity and ecosystem services in fisheries management.

Regulatory framework

Mangroves have several regulatory instruments for their conservation and management. The authority responsible for their management is the MAE. In 1990, the LFANSV was amended to declare all mangroves (including those on private property) as State property, so they can only be used through concessions⁸⁶. The SGMC is also responsible for mangrove concessions and for coordinating the Control and Monitoring Units (UVC)⁸⁷. Concessions are agreements between the Ecuadorian government and a group of organized users, so they can make use and custody public property for 10 years. Concessions are granted to an organization (ie association or cooperative) which has been legally established, in order to make sure that users make orderly use of the resources existing in the mangrove. These concessions may be renewed depending on the performance of the licensee group. In 1999, the regulatory framework was established⁸⁸ for traditional mangrove users to request the use of mangrove areas for exploitation, through the signature of a sustainable use and custody agreement⁸⁹ issued by the MAE (Table 4).

Table 4: Legislation for agreements enactment on mangrove sustainable use and custody

Regulatory Agreements for Mangrove Sustainable use and Custody			
Executive Order 1102 (1999)	Ministerial Agreement 172 (2000)	Ministerial Agreement 129 (2010) States 8 main requirements:	Ministerial Agreement 144 (2011)
Empowers the MAE to issue agreements for mangrove sustainable use and custody	Issues instruction for granting Agreements defining the allowed resources and requirements.	Plano, management plan, legal status, list of partners, technical assistance, internal regulations, and copies of the appointment of directors.	Amends Ministerial Agreement 128. Establishes programs incorporated in the management plan.

⁸⁶ Law 91 published in the Official Gazette 495 of August 7th, 1990.
⁸⁷ The PMRC established the Conservation and Monitoring Units (UCV) as an integration mechanism between authorities with jurisdiction over the various coastal resources (e.g., fishing, intertidal zone), coordinated by the Captain of the Port. The agreement creating the Marine and Coastal Management Undersecretariat (SGMC) establishing the responsibility of coordinating the UCVs (Agreement 024 of the MAE published in the Official Gazette 558 of March 27th, 2009)
⁸⁸ Executive Order 1102 published in Official Gazette 243 of July 28th, 1999. Subsequently, instructions to grant agreements for mangrove sustainable use and custody were issued (Agreement 172 published in the Official Gazette 365 of January 20th, 2000), which was updated through Agreement 129 (published in the Official Gazette 283 of September 21st, 2010) and Agreement 144 (issued on August 9th, 2011).
⁸⁹ Henceforth the term mangrove concessions will be used to refer to agreements on mangrove sustainable use and custody.

The first concessions were awarded in 2000 and a number of them have been renewed the last years. In 2003 a chapter on the mangrove was included in the Unified Text of Secondary Environmental Legislation which establishes, among other things, that mangroves will be administered by management areas corresponding to the jurisdiction of each Harbormaster⁹⁰. By 2006⁹¹, mangrove cover had increased from 146,938 hectares in 1995⁹² to 148,230 hectares. In 2008, the Ecuadorian government decided that shrimp farms that had unlawfully occupied mangrove areas must reforest the affected area⁹³. In 2011 it was established that the cost for loss of environmental goods and services reaches USD 89,273.01 per hectare⁹⁴. This value applies in penalties for cutting, burning or destroying mangrove forests. These important regulatory changes have led to the appropriate management of mangrove resources.

At MPAs level, control and monitoring responsibilities lies with the MAE, but beaches are the responsibility of GADs. Manta, Puerto López and Santa Elena municipalities already have management ordinances.

The PNBV mentions the ICM in subparagraph k of 2.12 policy⁹⁵: “To promote and establish coordinated regulations between the levels of the government for integrated coastal management and land use of coastal and island edges”.

Barrier 8: Current municipal organization of the waterfront is not appropriate for the conservation of nesting beaches. Current ordinances do not address the critical factors that negatively affect sea turtles nesting and other essential elements of coastline biodiversity. In coastal spaces there is no control of pets or street animals, berm is invaded and disrupted, the circulation of motorized vehicles is common in the beach, there is no regulation that limits light pollution⁹⁶, and in periods of high influx of tourist, high-impact activities are performed such as boat rides sailing along the coast, improper disposal of garbage by tourists, sellers and traders, and installation of temporary diners and bars in the beach.

Barrier 9: Comprehensive coastal management is not integrated in municipal management. Despite the progress achieved by the PMRC, the national ICM perspective has diluted. In national public policies there are no specific guidelines for implementing comprehensive coastal management. Additionally, the municipalities of Manta, Puerto López, Santa Elena, Playas and Guayaquil have not internalized the ICM perspective. Therefore, to address this barrier, this Project will propose a national strategy for comprehensive coastal management to be analyzed at the highest level by the Interagency Sea Committee. In addition, skills will be developed in the five municipalities to mainstream the ICM perspective in their operations, and supporting them to make that coastal management ordinances and management plans of the four new MPAs incorporate the ICM approach.

⁹⁰ Harbormasters are the maritime control authority and are managed by the National Directorate of Aquatic Spaces (DIRNEA).

⁹¹ CLIRSEN. 2007., op.cit.

⁹² CLIRSEN. 2007. Update of multitemporal study of mangroves, shrimp farms and saline areas in the Ecuadorian continental coast to 2006. MAE-PMRC: 77 pp.

⁹³ Executive Order 1591 published in the Official Gazette 454 of October 27th, 2008.

⁹⁴ Resolution 056 of the MAE published in the Official Gazette 496 of June 21st, 2011.

⁹⁵ i.e., "to promote the creation of a polycentric structure of human settlements that promotes territorial cohesion".

⁹⁶ The lighting of the water front alters the behavior of sea turtles when they seek nesting beaches and disorients hatchlings when they head out to the sea.

MAE will lead the updating of the standard on mangrove concessions based on the experiences resulting from this project (USD 8,624). Towards the end of the Project, CI-Ecuador will support the development of the fishing regulations in MPAs and will be responsible for promoting their implementation in REMGSF, RMEP, REVISMEM, and REMACH. (USD 449,118)

HIVOS will promote the strengthening of organizations for political influence in mangrove conservation (USD 50,900). GIZ will support activities to strengthen the regulatory framework in regards to the national ICM strategy (USD 250,000). CEDEAL will contribute to the community empowerment of African people who are settled in the REMACAM, and will be working on the inclusion of women in decision-making of biodiversity and territory management (USD150,000), while WildAid will prioritize actions to generate greater response by the port authorities to meet immediate actions associated with illegal fishing (USD25,000)

b) Incremental reasoning

Therefore, the incremental investment of GEF would cover activities grouped into three components:

1. Integrated management of coastal areas of high biodiversity value

This project proposes to create MPAs in four sectors where it has been determined that sea turtles nest. The main focus will be the conservation of sea turtles, which are charismatic endangered species, as a central element to prove the value of beaches and raise public awareness on the importance of preserving this ecosystem.

Figure 4. Sectors where the four new protected areas will be located.



In the turtle nesting beach areas, that require protection, this project will provide the needed support so that flexible and participatory management systems are established. For this purpose, the category of "national recreational area" has been selected, since it combines the

recreational use of beaches with the conservation of valuable biodiversity species. Local stakeholders will also join management of MPAs and participatory processes for the preparation of management plans will be carried out. A key player is the local municipality that will seek to integrate the conservation of the beaches and support for the new MPAs in its strategic planning. The four beach sectors that require protection (according to table 2 and figure 4) are located in the municipalities of Manta, Puerto Lopez, Santa Elena, Playas, and Guayaquil.

The project will provide technical assistance so that all concessions will apply basic measures of sustainable management. Such measures include, at least: (i) an organization that plans, implements and evaluates management actions, and which resolves conflicts that arise among its members and applies sanctions on offenders, (ii) a control and monitoring system that protects the whole concession; and (iii) a set of management measures agreed upon for the sustainable use of resources that are exploited. For this purpose, existing good practices and successful experiences will be identified, and a horizontal transfer of knowledge will be performed (from fisherman/women to fisherman/women) and the update of concession management plans will be supported. The basic management scheme will be replicated to extend it to other local groups and mangrove areas under concession. MAE will draw up a ministry agreement to eliminate the restriction to grant concessions in protected areas, which will help crab catcher groups of REMACH fulfill requirements and will allow concessions to be granted within other MPAs (such as REMACAM and REVISMEM).

To promote biodiversity conservation, the project will provide information and will encourage grantees of concessions to protect important mangrove species. The project will also support the update of management plans and the inclusion of protective measures of endangered species such as the coastal crocodile and sea turtles. The matching of these actions with national strategies or valid action plans for the conservation of wildlife will be facilitated.

In order to promote the sustainability of these actions, the project will support the grantees of concessions that are interested in becoming Mangrove Partners under the Socio Manglar incentive programme . The purpose of this is to develop skills and abilities to manage funds and invest them appropriately. Finally, the project will ask control authorities to include mangrove concessions in their priorities and to strengthen inter-institutional mechanisms for the coordination and cooperation within a UCV context.

2. Conservation of biodiversity when managing fisheries

The project will enhance the empirical practices applying RBM in six mangrove concessions, which will be used as illustrative cases. Technical assistance and training will be provided to strengthen existing systems and subsequently they will be replicated at six other concessions using the fisherman/woman to fisherman/woman methodology. Fishery management systems that set reference limits to facilitate decision making will be supported. Fishing management models of dark clams and crabs to be developed will be replicated at other mangrove concessions, after the project is implemented. It is also expected that this experience will influence regulations of the exploitation of these resources under the authority of the SRP.

Additionally, the project will sponsor the development of practical experiences of RBM for dark clams, crabs, lobsters, octopuses and Pacific bearded brotula⁹⁷ at five MPAs. The

⁹⁷Lobster, octopus and Pacific bearded brotula fishery resources extracted from MPAs are in great demand and have a great value.

development of skills of fishermen and MPA personnel will concurrently be supported. Finally, based on project experiences, a regulation of fisheries in MPAs will be drawn up that will guide fishing management in all MPAs.

3. Strengthening of the regulatory framework for the conservation and management of sea and coastal biodiversity.

This project will propose a national ICM strategy to be analyzed at the highest level by the Inter-Institutional Sea Committee. In a complementary manner, skills at five municipalities will be developed to integrate the IMC approach in their operations and coastal management ordinances as well as management plans of the four new MPAs. In concrete the project will support the preparation and adoption of coastal management ordinances of the municipalities of Manta, Puerto Lopez, Santa Elena, Playas, and Guayaquil. Ordinances will include, among others, measures to prevent and mitigate impacts caused by stray animals, pollution caused by light, and dunes and native biota destruction. At each GAD, the coordination of municipal planning and the management plan of MPA will be supported. Finally, the implementation of a tourism certification scheme for beaches will be supported (i.e. Standard number NTE INEN 2631:2012) as a mechanism for planning and organizing tourism activities (although certification will not necessarily be sought).

Scenario without GEF involvement

Sea turtle nesting beaches are deteriorating, reducing their reproduction and threatening the size of the population of these vulnerable species including green, ridley, hawksbill and leatherback turtles. Considering the global situation of populations of sea turtles, and especially of the hawksbill turtle, the loss of eggs and hatchlings is a great threat for their survival.

The fisheries of dark clams and crabs at REMACAM and of the Gulf of Guayaquil could collapse. In REMACAM, the situation is critical and could potentially cause overfishing of the ecosystem with the consequent degradation of the food chain and severe social and economic impacts on local populations. It is possible that some concessions will become nonviable due to the inability to manage the territory and control the pressure of external fishermen accustomed to free access.

There will be a greater degree of deterioration and the potential collapse of fishing resources of the MPAs. The efficiency of the management of MPAs would be limited by deficient fishing management. The plundering of fish stock and the damage caused to biodiversity might continue and could increase due to the negative impact on the ecosystem.

Alternative scenario with GEF's intervention

Nesting beaches of sea turtles will be protected by coordinating their conservation in an MPA scheme inserted in an ICM context with the support of the municipal governments. A long-term conservation system will be established to guarantee that turtles can nest and that their descendants can return to the beaches where they were born. The population and local stakeholders will become aware of the importance of the conservation value of nesting beaches. There will be mechanisms and capacities to collaboratively manage protected coastal areas with municipal governments as part of the MCI context.

At least the capture of dark clams and crabs in REMACAM and in the Gulf of Guayaquil will be stabilized and their collapse avoided. Most of the grantees of concessions strengthen the protection of mangrove areas, by control and monitoring systems that are efficient, with the support of control authorities, and they implement RBM schemes appropriate for local conditions. An incentive scheme (Mangrove Partner) to provide long-term financing to fund investment needs for mangrove management will be implemented. The grantees of mangrove concessions will contribute to the protection and conservation of highly-valued biota. MAE will have the skills and know the procedures needed to manage mangrove concessions, in a decentralized manner, and to provide support to grantees of concessions.

The capture of dark clams and crabs in REMACH and REVISMEM will be stabilized, at least, along with the capture of lobsters, octopuses and Pacific bearded brotula in REMGSF and RMEP. Management capacities and RBM models that can be replicated in other MPAs will be developed. There will be regulations for managing fisheries within MPAs.

1.1.2 FAO's comparative advantages

At the global level, FAO has extensive experience in information generation and analysis for sustainable fisheries management and policies, along with instruments for fisheries and coastal resources management that are ecosystem-based. FAO has helped many governments, in all regions, in their efforts to have sustainable fisheries management systems and in the formulation of social policies for sustainable and social use of coastal and sea ecosystems.

FAO has extensive experience in the Ecuadorian fishing sector, especially in artisanal fishing through technical cooperation projects, such as FAO/TCP/ECU/3103, TDF-04/ECU/00, TCP/RLA/0071, TDF-99/ECU/002, TCP/ECU/4552, and TCP/ECU/3003. Likewise, recent FAO studies presented in "Memoirs: 60 years of FAO in Ecuador: 1952-2011" on the fishing situation in the country have identified certain weaknesses in the management of fishery resources that directly affect the needs and living conditions of artisanal fishermen. Actions to combat these weaknesses are included in various fishery projects of Ecuador.

It is important to mention that the report on the Situation of Artisanal Fishing in Ecuador has contributed to the analysis of the subsector. It has also been the basis of other related initiatives such as the National Action Plan for the Conservation and Management of Sharks in Ecuador (PAT-EC). The report has allowed the follow up on objectives of the Action Plan for the Conservation and Management of Sharks (PAI-Sharks) supported by FAO. The Permanent Commission for the South Pacific (CPPS) promotes actions as part of the framework of the "Action Plan for the Conservation of Sharks, Rays and Chimaeras in the Southeastern Pacific - PAR Shark." The purpose of this Action Plan is to allow the continuity of work developed for its implementation.

FAO and the Under-Secretariat of Fisheries have developed outreach and training activities related to the Code of Conduct for Responsible Fisheries. Such activities have also focused on good practices, fishing technology, gear and equipment, vessel construction and repair, safety at sea, fishing rights, fisheries management and disaster prevention. Based on such training opportunities, fishermen have adopted such practices and shown a great interest. The results of these trainings have been very positive, and have covered topics such as the importance of monitoring of fish stocks, as well as an awareness of fishermen on measures for rational exploitation. They have even encouraged the granting of credit lines of Banco Nacional de Fomento (National Development Bank), and access to technology for artisanal fisheries in order to create family businesses, and improve their quality of life and the livelihood of their families.

1.1.3 Participants and other stakeholders

Project stakeholders

Project stakeholders will be:

1. MAE by means of (i) SGMC, (ii) management teams of the five existing MPAs (REMACAM, REMGSF, RMEP, REVISMEM, and REMACH⁹⁸) and of the four areas to be created during project implementation; and (iii) the national incentive program for the conservation and sustainable use of the natural heritage (Forest Partner), which will manage the Mangrove Partner chapter.
2. Municipal GAD of Manta, Puerto Lopez, Santa Elena, Playas and Guayaquil that will include in their territorial management the new MPAs for the protection of sea turtle nesting beaches.
3. The Guayas Provincial Government that will support the management of concessions in the inner estuary of the Gulf of Guayaquil.
4. Local groups are active in the areas where new MPAs will be established, which will be included in Management Committees.
5. Control sectoral authorities (Captaincies of Ports, SRP and MINTUR) that will participate in management committees of the new MPAs and that will support control and monitoring systems of MPAs and mangroves. SRP will act as the advisory body for the development of fishery management based on rights of use of MPAs and mangrove concessions.
6. SETEMAR will support the intersectoral coordination required by the project to advance the approach of ICM.
7. Universities, research institutes and local NGOs that generate scientific and technical information.

Project beneficiaries

The direct project beneficiaries will be:

1. Grantees of mangrove concessions (around 5,000 families)
2. Communities that live in mangrove areas of REMACAM and of the Gulf of Guayaquil.
3. The fishermen and the actors of the value chain of dark clams and crabs.
4. The fishermen and the actors of the value chain of octopuses, Pacific bearded brotuloes and lobsters that are caught in REMGSF and RMEP.
5. Beach users and residents of the coastal area that will be included in the four new MPAs.

1.1.4 Lessons learned from past and related work, including evaluations

The project design has incorporated a large body of experience. The main experiences derived from: (1) the work developed by PMRC, (2) initiatives to protect nesting beaches of sea turtles in the Ecuadorian mainland, (3) lessons learned from the management of mangrove concessions; (4) initiatives of fishery management of MPAs, mainly in REMGSF and REMACH; and (5) the application of the Forest Partner incentive.

The main lessons learned are:

⁹⁸ Appendix 8 includes a summary of each MPA.

1. The complexity and interdependence of public affairs related to integrated coastal management require the action of multiple actors. And the success of interventions depends to a great extent on the degree of coordination and support among them. ICM is an issue that needs to be addressed in a synchronized manner by multiple agencies of the Ecuadorian State (both central bodies and GADs). Therefore, initiatives and projects of ICM require coordination efforts, as well as institutional agreements and appropriate incentives. Additionally, special care must be taken regarding the execution scheme and the actors that must be determined, starting with the design of strategies to achieve the objectives as well as the new framework for the existing institutional competencies.
2. For the conservation of nesting beaches the surrounding community should be involved and awareness should exist on the value of conservation, in daily practices and local regulations. Turtles are charismatic species. Therefore, the protection and the monitoring of their nests can be attractive for certain types of tourists, and can become an economic alternative that will promote their conservation.
3. The first two years after the granting of the mangrove concessions are critical, since grantees must take control of the area to protect their resources from harmful effects of external fishermen. The main barriers that should be overcome are:
 - a. Organize themselves and work collaboratively (an organizational structure that works is needed),
 - b. Establish a system of oversight and monitoring to take control of the territory, for which the support of supervisory authorities is really needed;
 - c. Implement internal rules to regulate the access and use of fishery resources; and
 - d. Establish mechanisms to cover the costs of monitoring, control and concession administration.
4. At MPAs the quick recovery of populations of fishery resources has been observed, when conservation measures were applied. However, when the resource shows signs of recovery, it becomes attractive to local and external fishermen. The pressure to exploit these resources is huge and can easily exceed conservation efforts, if there is not a firm control and monitoring system and if strict penalties are not imposed on offenders.
5. The groups that manage successful mangrove concessions empirically help establish schemes based on the allocation of access rights to fishery resources. Such schemes based on access rights can be replicated in other concessions and in the management of fisheries of MPAs.
6. Grantees of mangrove concessions are willing to invest in their concessions. Therefore, the return of the investment that they will receive is profitable for them. However, they have limitations regarding capital investments that might be expensive, such as those required to renew outboard motors or to install radio systems. Grantees of concessions have taken advantage of opportunities to bid for funds from small donations of SGMC and USAID, to finance such investments. The Forest Partner program has had positive results regarding the delivery of conservation incentives. There is a growing international experience on the usefulness of compensation mechanisms for environmental services. Delivering economic incentives to grantees of

mangrove concessions, which are intended for investment (not current expenditure), could facilitate their conservation.

1.1.5 Links to national development goals, strategies, plans, policy and legislation, GEF and FAO's Strategic Objectives

a) Alignment with national development goals and policies

The project is aligned with the National Plan for Good Living for the period from 2013 to 2017, specifically with (i) **Objective 7** that guarantees the rights of nature and promotes territorial and global environmental sustainability; (ii) **Policy 7.2.a.** that aims at strengthening SNAP, and other conservation systems based on integrated and participatory management, and territorial security of terrestrial, aquatic and sea landscapes, to contribute to the maintenance of their structure, functions, natural and evolutionary cycles, ensuring the flow and the provision of environmental services, (iii) **Policy 7.2.i.** related to the implementation of integrated sea and coastal management for sustainable use of natural resources, with a special focus on endangered species and ecosystems; (iv) **Policy 7.2.j.** focused on incentives aimed at promoting appropriate technology for conservation of nature centered on particular communities and individuals with a greater dependence on natural heritage for their survival; (v) **Policy 7.2.m.** with the aim of promoting research on sustainable use and conservation of biodiversity; and (vi) **Goal 7.2** whose aim is to increase mainland sea-coastal territory under environmental management or conservation so that such territories will correspond to 817,000 hectares.

The project is aligned with National Environmental Policies⁹⁹, specifically with **Policy 2** related to the efficient use of strategic resources for sustainable development of the following: water, air, soil, biodiversity and genetic resources. The project is aligned with three strategies of this policy: **Strategy 1** "integrated management of ecosystems;" **Strategy 2** "the conservation and sustainable use of natural heritage, based on the fair and equitable sharing of benefits;" and **Strategy 3** "to incorporate environmental issues in the National Territorial Strategy".

The project is in accordance with the Policy and Strategic Plan of the National System of Protected Areas of Ecuador for the 2007-2016 period, since it supports the implementation of the following strategies: (i) **E 1.** Consolidation and complementing of the SNAP structure, and as part of this strategy as related to **Objective 1.** Consolidate the National System of Protected Areas of Ecuador, to guarantee the conservation and representative nature of land, sea, and sea-coastal ecosystems,¹⁰⁰ (ii) **E 8.** Strengthening of policies, legal instruments and procedures for the feasibility and environmental assessment of development activities in buffer zones, and at such areas, the fulfillment of **Objective 5** will be supported. Promote the establishment of a regulatory, policy, institutional, and financial framework that is favorable to the management of the National System of Protected Areas.

The project is also aligned with Sea and Coastal Policies established by SETEMAR, specifically those that support the fulfillment of **Policy 1.** "Preserve the natural and cultural heritage, ecosystems and biodiversity of sea and coastal areas, respecting the rights of nature in mainland Ecuador, the Galapagos Archipelago, the territorial sea, the adjacent areas, the exclusive economic zone and the areas of Antarctica that belong to Ecuador;" and **Policy 4.**

⁹⁹ National Environmental Policies were enacted by Ministerial Agreement 086 published in Official Register 064 of 2009.

¹⁰⁰ As part of Strategy 1, the project will also support the achievement of the goal that ensures that gaps in ecological representativeness will be filled through the establishment of new SNAP protected areas (year 2012).

“Encourage exploration and production activities for an efficient, inclusive and sustainable use of coastal zone resources, sea resources, high seas and seabeds.”

b) Alignment with NAPA, NAPs, NBSAP, NIPs, NAMA

Ecuador ratified, in 1993, the CBD and developed under the leadership of MAE the “Política y Estrategia Nacional de Biodiversidad 2001-2010” (National Biodiversity Policy and Strategy for the 2001-2010 period).¹⁰¹ The project is aligned with the following strategies of the mentioned document: (i) **Strategy 1** “Consolidate and enhance the sustainability of productive activities based on native biodiversity,” (ii) **Strategy 2** “Guarantee the existence, integrity and functionality of the components of biodiversity: ecosystems, species and genes”, (iii) **Strategy 3** “Balance pressures for the conservation and sustainable use of biodiversity;” and (iv) **Strategy 4** “Ensure respect for and exercise of individual and collective rights of citizens to participate in decisions related to access and control over resources, and guarantee that benefits of conservation and use of biodiversity and knowledge, innovations, and practices of communities and local populations are fairly and equally distributed.”

c) Alignment with GEF focal area biodiversity

The project is aligned with GEF's Biodiversity Strategy. The first component of the project is linked to **Objective 1** on the improvement of the sustainability of protected area systems, and **Objective 2** on the inclusion of the conservation and sustainable use of biodiversity in land and sea productive areas and sectors. In relation to Objective 1, component 1 will support Outcome 1.1, to improve the effectiveness of the management of new and existing protected areas. Four new sea-coastal areas will be established for sustainable management, to strengthen the national system of protected areas, where sea-coastal biodiversity is still underrepresented. The new areas will include around 15,000 hectares, and the main focus will be to mitigate the pressures from tourism development, overfishing, and pollution from land based sources. The new areas have been selected based on their importance for conservation priorities of identified threatened marine biodiversity, including zones where sea turtles nest. The areas will include beach zones and will extend one mile offshore, which include the reserve area for the production of bioaquatic species, as established by fishing authorities.¹⁰² The management of these areas, in order for them to incorporate measures for biodiversity conservation, will be an integrated management exercise which will involve all sectors, such as the fishing authority (SRP), the sea authority (DIRNEA), the tourism authority (MINTUR), autonomous decentralized governments and environmental authorities.

Additionally, component 1 will support Outcome 2.1, the increase of land and sea landscapes that are sustainably managed and form part of biodiversity conservation. To support this Outcome the project will support the conservation of mangrove habitats and biodiversity, by strengthening the management of 49 mangrove areas. These are managed by local groups based on mangrove sustainable use and protection agreements that have already been signed (commonly known as mangrove concessions). Local community groups will be supported in strengthening their skills as related to the development and implementation of monitoring and control plans, and will draw up mutual agreements related to the use of mangrove resources. Additionally, six local groups will be supported in drafting baseline studies and management plans to access new mangrove concessions. A financial incentive mechanism will also be implemented to sustain mangrove concessions and their conservation activities.

¹⁰¹ Adopted by Executive Decree 2232 published in Official Register 11, dated January 30, 2007.

¹⁰² Agreement 134, dated July 24th, 2007. In this area, industrial fishing is banned and only certain types of artisanal fishing can be carried out.

Component 2 will, with its focus at conserving fishery resources, also support Outcome 2.1. The project will support the development and implementation of fishery management systems based on access rights within MPAs and mangrove concession areas. Systems will be developed for fisheries of dark clams and crabs in mangrove areas (i.e., REMACH, REVISEMEM, and REMACAM) and octopuses, lobsters and Pacific bearded brotulaes in stony areas (i.e. REMGSF and RMEP). These systems will allow for the conservation and improved utilization of fishery resources by local communities and conservation of populations in protected areas so that, in turn, they will distribute biomass in sea environments. To develop these actions, all mangrove concessioners will be supported in designing and implementing management plans for mangrove fisheries resources. These experiences will be the basis for fisheries management models for other MPAs of mainland Ecuador.

Component 3 will support Outcome 2.2 to incorporate measures for the conservation and sustainable use of biodiversity in policies and regulatory frameworks. To improve the regulatory framework for ICM based on project experiences and developed practices, proposals will be presented for the following: (i) update of the rules for mangrove concessions granted to traditional users; (ii) regulations for fishing in MPAs; (iii) national ICM strategy; and (iv) a model for local government's coastal management ordinances. Proposals will be developed through advisory and participatory processes that will focus on incorporating the conservation and sustainable use of marine biodiversity in sectoral regulations.

Finally, the project will contribute to the achievement Aichi Targets 6, 8, 11 and 12.

d) Alignment with FAO Strategic Framework and Objectives

The proposed project is aligned with the strategic framework of FAO 2009-2019, according to (i) **Strategic objective C.** Management and sustainable use of fishery and aquatic resources, (ii) **Strategic objective F.** Sustainable management of land, water and genetic resources and improvement of reactions to global environmental challenges that affect food and agriculture, and (iii) **Strategic objective k.** Gender equity for access to resources, goods, services and decision making in rural areas.

SECTION 2 – PROJECT FRAMEWORK AND EXPECTED RESULTS

2.1 PROJECT STRATEGY

In order to achieve global environmental benefits and safeguard the high biodiversity value in coastal and mangrove areas, the project will focus on protecting beaches that are sea turtle nesting sites, it will continue developing mangrove concessions to local groups and will develop mechanisms in order to sustainably manage fishing grounds in the protected marine zones; all of which is to be founded on the strengthening of the regulatory framework for the conservation and management of marine and coastal biodiversity. The sea turtle nesting site beaches will be protected through the creation of protected areas. These will be managed under an integrated management plans appropriate for their geographical context, in order to reduce the pressures that affect them. Mangrove concessions will be improved through direct support in order to develop the organizational and implementation capacities of the community systems of fishing management, controls and surveillance. This support will be mainly based on the sharing of experiences among fishermen in order to spread knowledge on successful experiences. Additionally, a financial mechanism will be implemented, which will allow concessionaires to have funds to invest in supporting the management of the mangrove areas that are under their guard. At the same time, learning experiences on access rights based fishing management in protected marine areas will take place and fisheries management by the community will be strengthened in the mangrove concessions. These new models will serve as a base for fishing management among the network of protected marine areas and in mangrove concessions of continental Ecuador. Finally, the regulatory framework will be strengthened in order to support management of 1.) coastal areas, 2.) fishing in protected areas and 3.) mangrove concessions. All these activities are to be implemented using highly participatory processes that involve key stakeholders from all levels of the decision-making process.

2.2 PROJECT OBJECTIVES

The **Global Environment Objective** is to develop an integrated management approach for the use and conservation of coastal and marine areas of high biodiversity value, by establishing conservation areas, strengthening mangrove concessions and integrating biodiversity conservation in fisheries management within conservation areas.

The **Project Development Objective** is to improve and sustain livelihood conditions for coastal communities depending on near shore fisheries, in particular fishermen and women catching red and brown shell crab for a living in the Gulf of Guayaquil and estuary of Cayapas - Mataje.

2.3 EXPECTED PROJECT OUTCOMES

The results expected to be achieved at the end of the project include:

Outcome 1.1: Four new coastal-marine conservation areas (c.a., 15.000 ha) will be under integrated and effective management (at least 50/90 points in the management effectiveness tracking tool of GEF, METT) leading to stabilizing or increasing the detection of green turtle, olive ridley sea turtle and leatherback turtle nesting sites.

Baseline: a) Effectiveness of managing new areas are 0; b) 22.5 km of nesting site beaches protected along the continental coast within Machalilla National Park; and c) Baseline for turtle nests and traces per km per day to be established in project year (PY) 1

Target: a) >50/90 METT; b) 15,000 ha protected including >122 km protected turtle nesting site beaches; and c) Turtle traces km-1 day-1 and nests km-1 dar-1 > PY 1 baseline (<15% variation)

Outcome 1.2: Biodiversity conservation integrated into the management of at least 96,000 ha of mangroves under concession granted to community groups

Baseline: a) 59,000 has of mangrove concessions (49 concessions granted). 12,500 ha under expired concessions expired (20 concessions); b) Baseline for biodiversity and ecosystem health species indicators (crab, dark clam) to be established in PY1; and c) Hawksbill sea turtle (*Eretmochelys imbricate*) and the American crocodile (*Crocodylus acutus*) baseline in mangrove concession areas to be established in PY 1

Target: a) >96,000 ha of mangrove under valid concessions; b) Population of biodiversity and ecosystem health species indicators (crab, dark clam) > baseline in mangrove concession area (<15% variation); and c) Population and spread of Hawksbill sea turtle and the American crocodile > baseline in mangrove concession area (<15% variation)

Outcome 2.1: Sustainable RBM of fisheries implemented in coastal MPAs (REMACAM, REMGSF, RMEP, REMACH and REVISMEM) and mangrove concession areas resulting in stabilization or increase in the catches of main fishing resources (i.e., red crab, dark clam, lobster, Pacific bearded brotula and octopus).

Baseline: a) No MPA in Ecuador have implemented fisheries management plans (0 ha); and b) 17,000 ha under mangrove concessions with basic approaches to RBM (out of 59,000 ha)

Target: a) Fisheries RBM plan implemented in 5 MPAs and catches monitored (144,000 ha); b) fisheries RBM plan implemented in >25,000 ha under mangrove concessions and catches monitored; and c) CPUE average \geq PY 1 baseline

Outcome 3.1. Conservation measures for the sustainable use of coastal marine biodiversity mainstreamed in regulatory framework for mangrove concessions, fisheries in MPAs, and for the municipal management of coastal zones

Baseline: Current regulatory framework lacks ICM approach. GEF BD policy and regulatory framework tracking tool score: 5/18

Target: > 12/18 in the GEF BD policy and regulatory framework tracking tool

Outcome 4.1. Project implementation based on RBM and application of lessons learned and good practices in future interventions, facilitated

2.4 PROJECT COMPONENTS AND OUTPUTS

In order to meet the project's objectives and achieve the expected results, it has been structured into four components:

Component 1. Integrated management of high-value coastal areas for biodiversity.

This component focuses on the following: protecting important sea turtle nesting site beaches (**outcome 1.1.**), strengthening the management of mangrove concessions (**outcome 1.2.**), and furthering the support of authorities involved in the integrated management of coastal areas (**outcome 1.1. and 1.2.**).

This component will cover 111,000 ha of coastal areas: 15,000 ha which are new protected areas and 96,000 ha which are mangrove concessions that are managed by local groups. The project will contribute to the creation of four new protected areas through processes that are

highly participatory, through the development of integrated coastal management mechanisms together with local actors and through the implementation of priority actions that focus on reducing pressures on biodiversity. In order to strengthen the management of the mangrove concessions, the project will execute the following actions: evaluate the current state of the 49 existing concessions (59,000 ha) in order to identify specific needs for improvement and technical assistance, support the expansion of three concessions (898 ha) and the establishment of approximately 21 new concessions (36,000 ha), provide for technical assistance and equipment needs of the concessionaires, strengthen the authorities' coordination and support mechanisms so that the concessionaires may access and use the financial mechanism Socio Manglar. The direct beneficiaries will be the communities located in the area of influence of the new protected areas and the mangrove concessionaires' families.

This component will be performed by CI-Ecuador in coordination with the MAE and in close coordination and collaboration with local authorities and players. HIVOS will perform the support activities for the mangrove concessions located in the REMACAM.

In order to achieve **outcome 1.1** the following outputs will be produced through the following activities:

Output 1.1.1: Four new coastal-marine areas legally established and under integrated and effective management covering at least 15,000 ha. Four new protected areas will be established in order to conserve important nesting site beaches for olive ridley, green, hawksbill and leatherback sea turtles. The areas will be located in the beaches that stretch 1.) Between San Mateo and San Lorenzo (Manabí Province), 2.) Between Salango and San Pedro (Manabí and Santa Elena provinces), 3.) Between Engabao and General Villamil (Guayas Province), and 4.) Along the ocean front of Puná Island (Guayas Province). The protected areas will include beaches, intertidal zones (which in several areas include tide pools) and one nautical mile.¹⁰³ The new protected areas to be established as national recreation areas (a national categorization of management equivalent to that of category VI of the UICN). This will allow for the regulation of activities that take place along coastal areas in order to minimize their negative impacts and conserve related biodiversity including (in addition to the sea turtles that use the beaches for nesting) coastal vegetation, invertebrates, fish and marine birds.

GEF resources will be used in technical assistance in preparing for the management alternatives studies (EAM) of the four areas, which is a formal requirement of the process of declaring a protected area. It is a technical document containing the information that justifies the declaration and management category. Normally, the EAM is based on secondary information and includes: i.) A biophysical description of the area, ii.) A depiction of the area's ecosystems and biota, iii.) Identification of the objects of conservation, iv.) Characterization of the social and economic environment (including key players and users of natural resources), v.) A cartographic mapping of the area's boundaries. Technical support will be contracted in order to develop highly participatory processes for the preparation of the EAM. In each site, the following steps will be taken: 1.) Contact will be made with the municipality and other important authorities (i.e., MINTUR, the Port Captain, and SRP) and the key players that should be involved in the process will be identified, 2.) Meetings and workshops will be scheduled in order to explain the project and to involve local stakeholders, 3.) Rapid Ecological Assessment, Participatory Rural Appraisal and participatory diagnosis

¹⁰³ Referring to a reserve in the production of land and sea species, which was established by the SRP through Resolution 134 on July 24, 2007.

techniques will be used in order to gather information on the area, 4.) A detailed mapping of stakeholders will be prepared that identifies attitudes with respect to the creation of the new MPA and the levels of social conflict, 5.) From an ICM perspective, a political-administrative analysis will be performed in order to evaluate whether it is viable for the new MPA to be included in the municipality's management, 6.) The results will be presented to local stakeholders for discussion and analysis, and 7.) The document to be considered by the MAE authorities will be elaborated. This process will be executed in close collaboration with the SGMC staff and MAE's provincial offices (Manabí, Guayas, Santa Elena). Preparation of the EAMs will serve to identify possible local allies and collaborators that support the creation of new MPAs and that will support them in the long term. The process will conclude with the issuance of a resolution from the ministry that: i.) Creates the MPA, ii.) Establishes local participation mechanisms (e.g., steering committee), and the time frame for the elaboration and approval of the management plan, and iii.) Assigns the financial resources for its administration (e.g., personal expenses, operational costs). The EAMs will be prepared in the first year of the project and it is estimated that at least two MPAs will be established by the second year and that the four new MPAs will be created no later than the project's third year. Once the areas are created, four promotional videos will be created that demonstrate their value of conservation. These videos will be distributed widely and will be available on official websites (e.g. MAE, MINTUR, and SIMCE) and public websites (e.g., YouTube). In addition to this, ongoing awareness and educational campaign's focused on local stakeholders will be implemented in each area on: i.) The significance of the beaches and their biodiversity, ii.) The importance of nesting site beaches and iii.) Practical actions for the conservation of beaches and the protection of sea turtle nesting sites.

Output 1.1.2: Biodiversity baseline established and operating monitoring system of key biodiversity indicators including turtle traces and nets in each of the new MPAs. With funding from the GEF, an inventory of the biodiversity baseline will be carried out (including contiguous coastal areas where pressures on biodiversity are generated). Quantitative inventories on biota zones and beach profiles will take place. A central element will be to establish sea turtle nesting site indicators (Tracks $\text{km}^{-1} \text{day}^{-1}$ and Nests $\text{km}^{-1} \text{día}^{-1}$). Local stakeholders willing to collect the information over time will be identified (e.g., universities, high schools). Inventories will be made in close collaboration with i.) SGMC staff and MAE's provincial offices, and ii.) local stakeholders from each site, which may use the experience as hands-on training. Lastly, a simple and cost-efficient monitoring system that can be implemented locally will be designed. The documentation for each MPA will detail the procedures to follow for gathering field data as well as the mechanisms for the processing, storage and safekeeping of the information. The documents will be published in the SIMCE.

Output 1.1.3: Four management plans agreed with sectoral authorities, autonomous decentralized governments (GADs) and users of coastal marine resources including zoning and land-use planning incorporating economic valuation and protection of sensitive habitats and species (e.g. beaches where marine turtles nests, intertidal ponds, rocky reefs). GEF resources will be used to provide technical support in the preparation of the management plans of the four MPAs in the format established by the environmental authority. The management plans detail the programs to be implemented (e.g., public use, susceptible species conservation, control and monitoring), the institutional arrangements, the financial strategy and the zoning of the area. In order to prepare these plans information from the biodiversity baseline will be used (output 1.1.2) as well as detailed studies that will be financed by CI-Ecuador. GEF's financial resources will fund the participatory strategic planning process with local stakeholders and will be used in the preparation of the final document for each area. Prior to initiating the planning process, the MAE must have i.)

designated an Area Representative and its basic technical team and ii.) established the steering committees for each MPA. The participatory design of the management plans will be led by each Area Representative. The design will be assessed by the National Direction of Biodiversity (MAE) and will be carried out by the steering committees, through workshops and through meetings with local stakeholders. This will contribute to creating a social support base for the MPAs. Steps will be taken towards seeing that each MPA plan is fully understood by municipal planning and that there are institutional arrangements in place for a close collaboration between the MAE and the corresponding municipal GAD. The management plans are to be approved officially by the Ministry of the Environment by way of a ministerial resolution. An overview of each plan will be printed and distributed to local stakeholders and will be issued to the SIMCE so that its reach may be greater.

Output 1.1.4: Priority actions of the management plans implemented with the GADs including the management of solid waste, the regulation of fishing and tourism, and the control of domestic and stray animals. GEF funds will be invested in order to provide technical assistance to implement priority actions in each MPA. Throughout the preparation of the EAM and the environmental management plan, critical elements that require urgent intervention at the municipal level will be identified, which will also be funded by GEF funds. Based on the information gathered, priority actions would include:

- Control measures for stray animals that come to the beaches.
- Actions to order the waterfront
- Actions for solid waste management in beaches

GEF funds will be used to organize visits allowing for an exchange of experiences among the key players of the new MPAs, and lessons learned will be identified and documented. The documents produced from the lessons learned will be distributed widely among the key players of the four MPAs and they will be shared with the SIMCE for greater distribution.

In order to achieve **result 1.2**, the following activities will take place:

Output 1.2.1: Management of 49 mangrove concessions strengthened by supporting community group concessionaires in implementation of community monitoring and control plans and zoning and planning of resource use and conservation of mangrove biodiversity. GEF funds will be used to provide assistance to improve the management of the 49 existing mangrove concessions, which cover 59,000 ha. HIVOS, through a contract with CI, will provide support activities in the REMACAM, while CI-Ecuador will be in charge of providing assistance to the other concessions. Based on the information gathered on the status of current mangrove concessions (table 5), the diagnostic analysis will be continued enhancing the situation of each mangrove concession in order to identify the critical elements that need strengthening. The assessment will include a detailed financial assessment on the cost of operations and maintenance, an analysis on the condition of gender, management effectiveness and will identify best practices that can be shared among the concessions. Based on the results of the diagnostic analysis, an assistance plan will be developed for each concession that allows for the concessionaires to apply, at minimum, basic sustainability measures. “These basic elements include: i.) An organization that plans, performs and evaluates management actions; resolves conflicts among its members; and issues fines to offenders; ii.) A control and monitoring plan that protects the entire concession, and iii) A collection of management measures agreed-upon by organization members so that their natural resources may be sustainably utilized (e.g., off-limit zones and individual catching quotas).

Technical assistance will include elements of leadership development, the strengthening of organizational arrangements for the administration of the concession, financial administration, community planning (e.g., updating the zone area under their watch), community control and surveillance, and biodiversity conservation/protection (e.g., American crocodiles and sea turtles). Assistance provided to each concession will use practical training technics (hands-on) and will be based on the horizontal transfer of knowledge and experiences from fisher to fisher. Throughout the diagnostic process, individuals that have the ability and disposition for assisting with other concessionaires will be identified. These individuals will received a basic training on knowledge transfer techniques and will be the main support agents for the concessionaires under the “fisher to fisher” tactic (community promoters). Similarly, control authorities (e.g., port captain, police, or SRP) will be worked with in order to create support plans for the mangrove concessions. These plans will include aspects such as complaint response, back-up for community surveillance and the prosecution of offenders. At the end of the project, a new independent assessment of the concessions will be made in order to verify the condition of their management. In addition to the aforementioned actions, ongoing environmental awareness and education campaigns will be implemented throughout the four years of the project. The content and scope of the campaigns will be designed in collaboration with the SGMC, the National Direction of Biodiversity and the Area Representatives (when appropriate).

Figura 5. Ubicación de las áreas de manglar (verde) y las concesiones de manglar existentes (círculos).



At the beginning of the project, technical assistance will be provided to the SGMC with GEF funding in order to develop the administrative policies and procedures for more effective monitoring and support of the mangrove concessions. A priority will be placed on mechanisms that distribute tasks and that support the provincial offices of the MAE. CI-Ecuador will prepare an institutional and financial analysis in order to determine staff and budget needs and will prepare, together with the MAE staff, drafts of instructions, procedure manuals. The institutional procedures and arrangements will be made official by the MAE, as needed, by way of a ministerial resolution or agreements.

Table 5. Characteristics of mangrove in Ecuador Awards.

Beneficiaries	Surface (ha)	Status	Partners	Threats to the conservation of biodiversity
Asociación de Productores y Recolectores de Productos Bioacuáticos del Manglar Tambillo	2.576,60	Expired	40	Disrespect to the minimum size of capture of dark clam (a. tuberculosa and, similis) and blue crab (Cardisoma crassum). Consumption of bush meat (birds, mammals and reptiles)
Asociación Artesanal de Extractores de Recursos Bioacuáticos El Viento	1.207,00	Expired	25	Disrespect to the minimum size of capture of dark blue crab and clam. Consumption of bush meat (birds, mammals and reptiles)
Asociación Artesanal de Recolectores de Productos Bioacuáticos 18 de Octubre	1.095,57	Active	20	Use of Chinchorreras with less than permitted mesh eye. Incidental capture of organisms that do not reach reproductive size. Decrease in dark clam, captures dark clam and blue crab in a size less than the allowed size.
Asociación de Pescadores y Recolectores de Productos Bioacuáticos La Barca	767,55	Active	20	Disrespect to the minimum size of capture of dark clam and blue crab. Consumption of bush meat (birds, mammals and reptiles)
Asociación Artesanal de Recolectores de Productos Bioacuáticos Luchando por San Antonio	195,70	Expired	35	Disrespect to the minimum size of capture of dark blue crab and clam. Consumption of bush meat (birds, mammals and reptiles)
Asociación Artesanal de Recolectores de Productos Bioacuáticos Palma Real	1.057,00	Expired	50	Fishermen from PMPAanal, San Lorenzo y Pichangal, they use chinchorro (trawl net), changa, with very small mesh eye and even dynamite as non-sustainable fishing practices.

Beneficiaries	Surface (ha)	Status	Partners	Threats to the conservation of biodiversity
Asociación de Artesanos Recolectores de Productos Bioacuáticos "11 de octubre"	2.953,00	Expired	20	Fishermen from other localities such as San Lorenzo used fishing nets (hammocks) with small mesh eye in the area. Capture of shell of less than the permitted sizes.
Asociación Afroecuatoriana de Pescadores Artesanales de Productos Bioacuáticos del Manglar Canchimalero	362,00	Expired	25	Low availability of resources subject due to increase in fishing effort (free access), use of non-selective networks, captures red crab and dark clam below minimum capture size
Asociación Afroecuatoriana de Pescadores Artesanales de Productos Bioacuáticos del Manglar CMPAanita	522,00	Expired	30	Consumption of bush meat as the tulusio (<i>Caiman crocodilus</i>). Increase in fishing effort and bad fishing practices by disrespect of fishery regulation measures.
Asociación Afroecuatoriana de Agroartesanos y Pescadores Artesanales Guachal	1.022,90	Expired	28	Consumption of bush meat (birds, reptiles and mammals), increase in the fishing effort due to free access.
Asociación Afroecuatoriana de Pescadores Artesanales de Productos Bioacuáticos "El Bajito"	877,00	Expired	16	Free access to fishery resources extraction
Asociación Afroecuatoriana de Pescadores Artesanales Changuaral	362,00	Expired	30	Decrease in fisheries (shell and fish) productivity of the ecosystem of mangrove due to overexploitation, use of non-selective fishing gear, disrespect to the fishing regulations regarding minimum size of capture crab and dark clam

Beneficiaries	Surface (ha)	Status	Partners	Threats to the conservation of biodiversity
Asociación de Pescadores Artesanales y Comercialización de Productos Bioacuáticos de Manglares del Norte	385,18	Expired	45	Disrespect to the management measures fishing for minimum size of capture, free access to the fishery, inappropriate use of non-selective fishing gear.
Beneficiaries	Surface (ha)	Status	Partners	Threats to biodiversity conservation
Comuna Las Tunas	24,30	Operational	35	Total loss of the mangrove ecosystem
Beneficiaries	Surface (ha)	Status	Partners	Threats to biodiversity conservation
Asociación de Pescadores Artesanales, Mariscadores y Afines "Costa Rica"	519,79	Expired	60	Loss of fishery resources as dark clam, crab, oysters, and mussels associated with the loss of the mangrove cover and increase in fishing effort
Asociación de Mariscadores Autónomos y Anexos Productos del Mar	45,00	Expired	37	Waste, mainly from plastic sheaths of the banana plantations. Capture of dark clam in sizes smaller than permitted.
Asociación de Pescadores Artesanales Recolectores de Semilla de Camarón y Afines Unidos Venceremos	30,20	Expired	10	Poor coverage of mangrove, after the conversion produced in the decades of 1980 and 1990 for shrimp ponds. Concentration of fishing effort in the small space.

Beneficiaries	Surface (ha)	Status	Partners	Threats to the conservation of biodiversity
Asociación de Mariscadores Autónomos y Anexos Venecia del Mar	120,00	Expired	47	Waste of land supply, oil pollution. Capture of dark clam in sizes smaller than permitted. Income from casual users to grant.
Cooperativa de Producción Pesquera Leónidas Plaza	150,00	Expired	16	Loss of biodiversity by anthropogenic activities of land supply, especially for hydrocarbons, plastic stains of shrimp farm. The loss of mangrove cover, greater pressure of dark clam resource users and crab in productive mangrove patches...
Cooperativa de Producción Pesquera Artesanal Punta del Faro Jambelí	12,00	Expired	27	Waste of land, oil pollution. Capture of dark clam in sizes smaller than permitted. Income from casual users to grant Traspassing in the concession
Asociación de Recolectores de Semillas de Camarón y Otras Especies Bioacuáticas La Punta de Jambelí	13,10	Expired	16	Waste of land, oil pollution. Capture of dark clam in sizes smaller than permitted. Income from casual users to grant
Asociación de Comerciantes de Productos Pesqueros y Acuícola "Riveras del Huaylá"	51,70	Expired	18	Overexploitation of dark clam, disrespect to the minimum size of capture

Beneficiaries	Surface (ha)	Status	Partners	Threats to the conservation of biodiversity
Comuna La Puntilla	144,59	Operational	34	Overexploitation of dark clam, disrespect to the minimum size of capture
Comuna Bajo Alto	211,97	Operational	40	Disrespect to the minimum size of capture of dark clam, contamination of land source, especially gold and banana activities in the high basin of the river I paid and clotheslines.
CEDECO Pongalillo	482,37	Operational	40	S/D
Asociación de Concheros, Crustáceos y Pescadores Artesanales y Afines Las Huacas	925,01	Operational	160	S/D
Asociación de Pescadores y Mariscadores Anexos Isla Bellavista	237,95	Operational	45	S/D
Asociación de Producción Pesquera Artesanal y Afines 10 de Agosto	197,28	Operational	65	S/D
Asociación de Mariscadores Autónomos y Afines Los Isleños	651,60	Operational	130	S/D
Asociación de Recolectores de Mariscos "24 de octubre ARMA"	315,46	Operational	120	S/D

Beneficiaries	Surface (ha)	Status	Partners	Threats to the conservation of biodiversity
Asociación de Mariscadores Autónomos 19 de octubre	1.435,04	Operational	340	S/D
Asociación de Pescadores Artesanales 16 de julio	81,56	Operational	90	S/D
Beneficiaries	Surface (ha)	Status	Partners	Threats to biodiversity conservation
Asociación para el Uso, Manejo y Conservación del Manglar de Palmar	36,86	Expired	34	Total loss of the mangrove ecosystem
Beneficiaries	Surface (ha)	Status	Partners	Threats to biodiversity conservation¹⁰⁴
Asociación de Cangrejeros Seis de Julio	1.284,81	Operational	130	Disrespect to the reproductive season of crab. Changes in the time of the ban. The provisional banning does not conform to the crab breeding. Garbage and plastic thrown into the estuary by the users themselves in the sites of capture of red crab and during sailing towards the communities.
Cooperativa de cangrejeros Producción Pesquera Artesanal Nuevo Porvenir	2.236,00	Operational	120	S/D
Asociación de Cangrejeros y Pescadores de Balao	2.653,00	Operational	115	S/D

The problem of the red crab is general to all concessions in the province of Guayas.

Beneficiaries	Surface (ha)	Status	Partners	Threats to the conservation of biodiversity
Asociación de Cangrejeros 6 de julio (Nueva Concesión)	560,00	Operational	130	S/D
Asociación de Comerciantes Cangrejeros Puerto Buena Vista	454,57	Operational	230	S/D
Cooperativa de Producción Pesquera Artesanal Mondragón	232,77	Operational	210	S/D
Asociación de Usuarios Ancestrales de Pesca Artesanal CMPAo Alegre	7.042,50	Operational	800	S/D
Cooperativa de Producción Pesquera Artesanal El Conchal	1.258,10	Operational	130	S/D
Cooperativa de Producción Pesquera Artesanal Puerto La Cruz	1.137,31	Operational	170	S/D
Asociación de Cangrejeros, Pescadores de Balao	167,24	Operational	160	S/D
Asociación de Cangrejeros, Pescadores Artesanales y Afines Ríos de Aguas Vivas	2.579,30	Operational	120	S/D
Asociación de Comerciantes Minoristas de Cangrejo los Ceibos	1.548,00	Operational	130	S/D

Beneficiaries	Surface (ha)	Status	Partners	Threats to the conservation of biodiversity
Asociación de Usuarios del Manglar Cerritos de los Morreños	10.869,53	Operational	580	S/D
Asociación de Cangrejeros, Pescadores Artesanales y Afines Puerto Tamarindo	323,50	Operational	65	S/D
Asociación de Pescadores Artesanales de Especies Bioacuáticas y Afines Isla Escalante (APAREBAFIE)	4.087,45	Operational	130	S/D
Asociación de Pescadores Artesanales, Cangrejeros y Afines Sabana Grande	2.851,15	Operational	120	S/D

Output 1.2.2: 21 new mangrove concessions (39,908 ha) granted and three existing concessions expanded (898 ha). GEF funds will be used to subcontract technical support for the expansion processes of the three existing concessions and in the creation of 21 new mangrove concessions. The following groups have expressed their interest to the MAE and have taken the initial steps in meeting the legal requirements:

(1) Concessions to be expanded

Concessionaire	Concession start date (dd/mm/yy)	Surface area of concession (ha)	Surface area to be expanded (ha)	Principal fishing resource
<i>Association of de cangrejeros, pescadores artesanales y afines Puerto Tamarindo</i> (Puerto Tamarindo Association of Artisan Fishers and Crab Fishers)	16/04/2013	323.5	200.00	Crab
<i>Cooperativa de producción pesquera artesanal Puerto Las Cruces</i> (Puerto Las Cruces Artisanal Fish Production Cooperative)	05/08/2010	1,137.31	600.00	Crab
<i>Asociación de comerciantes minoristas de cangrejo Los Ceibos</i> (Los Ceibos Association of Small Commercial Crab Fishers)	20/09/2011	1,548.00	98.00	Crab

(2) New concessions to be established

<i>Asociación de pescadores artesanales y afines COPEANCA</i> (COPEANCA Association of Artisanal Fishers)		210.40		Dark clam

<i>Asociación de pescadores artesanales y concheros amor y esperanza</i> (Love and Hope Association of Artisanal Fishers and Shellfish Fishers)	317.22	Dark clam
<i>Cooperativa de pescadores artesanales 11 de enero</i> (January 11 th Artisanal Fishers Cooperative)	946.60	Dark clam
<i>Asociación de pescadores artesanales y mariscadores ni un paso atrás</i> (“Not One Step Behind” Association of Artisan Sea Fishers)	435.00	Dark clam

(3) New concessions in the protected area of the Churute Manglar Reserve

Concessionaire	Macro-zone of concessionaire groups	Surface area to be requested for the macro-zone (ha)	Principal fishing resource
<i>Asociación “26 de Febrero” de la comunidad El Mirador.</i> (“February 26 th ” Association of the <i>El Mirador</i> Community)	Soledad – Alamo fishing macro-zone	12160	Crab and Dark clam
<i>Cooperativa de Pescadores y Cangrejeros “La Flora”.</i> (“La Flora” Cooperative of Fishers and Crab Fishers)			
<i>Asociación de Pescadores, cangrejeros Artesanales y Afines “5 Septiembre” (ASOPESCAN - Duran).</i> (“September 5 th ” Association of Artisanal Fishers and Crab Fishers) (ASOPESCAN - Duran).			
<i>Asociación de cangrejeros y Pescadores</i>			

<i>Artesanales “Soledad Grande”.</i> (“Soledad Grande” Association of Artisanal Fishers and Crab Fishers)			
<i>Asociación de cangrejeros y Pescadores “Puerto Envidia”.</i> (“Puerto Envidia” Association of Artisanal Fishers and Crab Fishers)			
<i>Asociación de Cangrejeros, Pescadores Artesanales y Afines “16 de Enero”.</i> (<i>Taura</i>) (“January 16 th Association of Artisanal Fishers and Crab Fishers)	Taura fishing macro-zone	11020	
<i>Asociación de Producción Pesquera Artesanal “Caimital”.</i> (“Caimital” Association of Artisanal Fishers and Crab Fishers)			
<i>Asociación de Cangrejeros, Pescadores Artesanales y Afines “ChojMPAe”.</i> (“ChojMPAe” Association of Artisanal Fishers and Crab Fishers)			
<i>Asociación de Cangrejeros, Pescadores Artesanales y Afines “San Lorenzo”.</i> (“San Lorenzo” Association of Artisanal Fishers and Crab Fishers)	Los Ingleses macro-zone	8360	
<i>Asociación de Cangrejeros, Pescadores Artesanales y Afines “Puerto Santo”.</i> (“Puerto Santo” Association of Artisanal Fishers and Crab Fishers)			
<i>Asociación de Cangrejeros y Pescadores Artesanales “24 de Marzo”.</i> (“May 24 th ” Association of Artisanal Fishers and Crab Fishers)			
<i>Asociación de recolectores de crustáceos, mariscos y afines (ASORCMAF)</i> (Association of Crustacean and Sea Life Collectors) - ASORCMAF			
<i>Asociación de Recolectores de Cangrejos, Mariscos y Afines</i> “ASORCMAF”. (“ASORCMAF” Association of Crab and Sea Life Collectors)			

<i>Asociación de Pescadores Artesanales “Defensores de manglar”</i> (“Defenders of the mangrove” Association of Artisanal Fishers)			
<i>Asociación de Cangrejeros y Pescadores “25 de julio”.</i> (“July 25 th ” Association of Fishers and Crab Fishers)			
<i>Asociación de Cangrejeros y Pescadores “20 de Mayo” San Vicente.</i> (“May 20 th ” Association of Fishers and Crab Fishers) – San Vicente			
<i>Asociación de Cangrejeros y Pescadores Artesanales “Santo Domingo 2 de Abril, Isla Matorrillo”.</i> (“Santo Domingo, April 2 nd , Isla Matorrillo Association of Artisanal Fishers and Crab Fishers)	Matorrillos macro-zone	6460	
<i>Asociación de Cangrejeros 23 de Abril.</i> (April 23 rd Association of Crab Fishers).			

Seventeen organized groups will be the beneficiaries of at least four concessions (macro-zones), which will be declared within the REMACH in order to regulate the activities of the crab fishers that have traditionally worked within the reserve. Upon initiation of the project, the MAE will issue a ministerial agreement reforming Article 7c of Ministerial Agreement 129¹⁰⁵ in order to allow for mangrove concessions to be granted within the protected areas.

For the expansion of mangrove concessions, the project will provide assistance for the following: i.) Establishing an inventory of the biodiversity present and a cartographic sketch of the expansion area; ii.) Updating the area’s management plan (including zoning uses, the community control and surveillance program, and the measures for the fishing and conservation management of biodiversity; and iii.) Strengthening the organizational arrangements for administering the concession.

In order to create the new mangrove concessions, the project will provide assistance with the following: i.) Establishing an inventory of the biodiversity present and a cartographic sketch of the area, ii.) Evaluating the possibilities for conflict and possible violations (e.g., illegal fishing) and prepare the community control and surveillance program, iii.) Establishing zoning for the area and fishing and conservation management programs for biodiversity through active participation, iv.) Creating organizational arrangements in order to administer the concession (e.g., internal regulations), and v.) Preparing an area management plan and

¹⁰⁵ El Ministerio de Ambiente expresó su voluntad de levantar la prohibición de otorgar concesiones de manglar en AMPs, a través del Subsecretario de Patrimonio Natural, durante el taller de revisión del marco lógico del proyecto, el 18 de marzo de 2014.

performing administrative management in order to obtain the concession. Preparation for the documents needed for the concessions that will be within the REMACH will be made in close collaboration with the staff of the protected area and will be constructed upon the social and organizational processes that have been developed to this point. It will be seen to that the concession management plan actions are in full compliance with the REMACH management plan and that they contribute to conserving the native biodiversity that is being protected. Additionally, it will be seen to that there is a balance between the control systems and the community surveillance systems so that together, they may assist in managing the reserve.

In both cases, in addition to professional technical support, the project will facilitate in assistance and monitoring by the experienced concessionaires through the “fisher to fisher” approach. Additionally, an amount of US \$90,000 will be available to grant minor equipment (e.g., radios, outboard motor vehicles) to support the development of the new concessions. Competition for these funds will be organized by the SGMC in collaboration with the provincial offices of the MAE of Guayas and El Oro.

Output 1.2.3: A financial support mechanism for mangrove concessions that transfers at least USD 1 000 000 a year to community groups for investment in mangrove conservation - At least 80% of the concessions are incorporated in the SOCIO MANGLAR mechanism (> 42,000 has). GEF funds will be used in providing technical assistance to the groups interested in utilizing the Socio Manglar incentive in the REMACAM. The main activities to be executed include: i.) Developing financial administration capacities, and preparing an investment plan as well as the reports required by the MAE; and, ii.) Providing assistance in developing practical skills throughout the application of the incentive and after its implementation. It is expected that during the first year, at least 28,000 ha of concessions will be included in the Socio Manglar incentive and that by the end of the project, at least 76,000 will be included.

Component 2. Conservation of biodiversity in fishery management.

The second component will focus on developing fishing management models in protected areas and in mangrove concessions. This component will include 144,000 ha from five protected areas (i.e., REMACAM, REMGSF, RMEP, REMACH and REVISMEM) and at least 25,000 ha of mangrove concession. The project will contribute to developing and implementing fishing management systems based on access rights and reference points and it will increase the capacity of MAE to manage fisheries from the MPAs. Rights-based fisheries management (RBM) will give responsibility to the fishers, promote the sustainability of fishing resources and will improve the economic performance of fisheries.¹⁰⁶ The use of Target Reference Points (TRP)¹⁰⁷ and Limit Reference Points (LRP)¹⁰⁸ will also facilitate decision-making by the fisheries.¹⁰⁹ This component will be performed by CI-Ecuador in collaboration with the MAE and in close coordination and collaboration with local fishers. HIVOS will perform the fisheries support activities for the dark clam in the REMACAM.

GEF funds will be used to develop fishing management models :

¹⁰⁶ See: Shotton, R. 2000. Use of Property Rights in Fisheries Management. FAO Fisheries Technical Paper 404. Volumes 1 and 2.

¹⁰⁷ A TRP indicates a state of a fishery and/or resource that is considered to be desirable and for which a regulatory action should be taken, whether such action is to take place during the development or throughout the recovery process of the population.

¹⁰⁸ A LRP indicates a state of a fishery and/or resource that is not considered desirable and for which a regulatory action should be avoided.

¹⁰⁹ See: Caddy, J.F. & R. Mahon. 1995. Reference points for fisheries management. FAO Fisheries Technical Paper 347. Rome, FAO: p. 83.

Tabla 6. Detalle de los sistemas de pesquerías a desarrollar en cada MPAs seleccionada con recursos del proyecto

MPAS Pesquerías	REMGSF	REMACH	REVISMEM	RMEP	REMACAM
corvina de roca	X				
langosta	X			X	
pulpo	X				
cangrejo rojo		X			X
dark clam			X		X

In the first two years, fishing management models will include the Pacific bearded brotula, lobster and octopus in the REMGSF; for the crab in the REMACH; and for the dark clam in the REVISMEM. In the last two years of the project, the management model for lobster will be replicated in the RMEP with CI cofinancing, and the model for the dark clam will be replicated in the REMACAM with GEF funding. Activities in the REMACAM will be based upon the experience developed in component 1 with area's mangrove concessions. In the project's last year, with GEF funds, experiences and best practices will be systemized and lessons learned will be identified in order to develop a technical model that can be applied to other protected marine areas in the country.

The implementation of this component includes the following specific outputs:

Output 2.1.1: Three A fisheries RBM plan operating within the Galera-San Francisco Marine Reserve that includes the Pacific bearded brotula, lobster and octopus. GEF funds will be used to contract specialized technical assistance so that, with the active participation of local fishers and the reserve's administration (i.e., the Area Representative and technical team), the management plans of the three fishing resources may be established the Pacific bearded brotula, lobster and octopus) . In the first year, participatory diagnostic techniques will be performed in order to: i.) Create an inventory of the baseline of each fishery (mainly the CPUE¹¹⁰ level and indicators of each stock) and its supply chain, ii.) Evaluate the availability of fishery data, and iii.) Analyze the viability of implementing RBM systems. Throughout the execution of these diagnostic techniques awareness information will be provided and fishers and staff from the protected area will be trained on RBM and basic fishing management. Based on the results of the diagnostic analysis, a basic plan for collecting essential fishery data will be created, which will be implemented over time and will be implemented with the collaboration of fishers and reserve administration. Fishery specialists will select and apply the most appropriate methods for evaluating the state of the stock and establish reference points based on methodologies applied on Data-poor fisheries (DPF). With these results, fishery management scenarios will be proposed based on RBM that will be discussed widely among each fishery group together with the participation of officials from the SRP and the National Institute of Fisheries (INP). In addition, documents on each of the three fishery management plans will be prepared. They will be written in plain language and will include several images and graphics so that they can be used easily by the fishers. In

¹¹⁰ Catch per unit effort

the project's second year, the three fishery management plans for Pacific bearded brotula, lobster and octopus will be adopted officially by way of a MAE resolution that establishes them as an integral part of the protected area management plan. Lastly, , a paper version of the plans will be issued to all the fishers of the Pacific bearded brotula, lobster and octopus of the REMGSF. Digital versions of the fishery management plans will be issued to the SIMCE for greater distribution.

Output 2.1.2: A fisheries RBM plan for lobster operating within the El Pelado Marine Reserve. This system will be developed based on the experience taken from the REMGSF (output 2.1.1) and will be completely financed by counterpart funds from CI-Ecuador (see section 1.1.1.a.2). CI-Ecuador funds will be used to contract specialized technical to replicate activities of output 2.1.1. In the second year,¹¹¹ lobster fishers and RMEP staff will be taken on an investigative visit of the REMGSF in order to get a first-hand understanding of the experiences and lessons learned from the preparation process of the lobster management plan. After that, participatory diagnostic techniques will be used to i.) evaluate the availability of fishery data and ii.) evaluate the viability of implementing RBM systems. Based on the results of the diagnostic analysis and based on previous experience in the REMGSF, the whole process will be replicated at the REMGSF, which will end with the plan's publication and issued to all the lobster fishers from the protected area. A digital version of the fishery management plan will be issued to the SIMCE for greater distribution.

Output 2.1.3: Two fisheries RBM plans for the dark clam operating within the El Morro Mangrove Wildlife Refuge and the Cayapas Mataje Mangrove Ecological Reserve. With GEF funds, technical assistance will be provided in order to develop a dark clam fishing development model in the REVISMEM, for later replication in REMACAM. In the first year, with CI-Ecuador co financing for El Morro and with cofinancing from HIVOS for REMACAM, a baseline inventory of fishery will be performed, mainly on CPUE levels and on the stock indicators of each protected area. Following, a participatory diagnostic techniques will be performed in order to: i.) Document the supply chain of dark clam, ii.) Evaluate the availability of fishery data, and iii.) Evaluate the viability of implementing RBM systems in the REVISMEM. Throughout the execution of the diagnostic techniques, fishery specialists will provide awareness information and will train fishers and staff from the protected area on RBM and basic fishing management.. Based on the results of the diagnostic analysis, a basic plan for collecting essential fishery data will be created, which will be implemented over time and will be implemented with the collaboration of fishers and reserve administration. This data will be sent to INP for its integration with other national fishery data on the dark clam. Fishery specialists, in collaboration with technical staff from the INP, will select and apply the most appropriate methods for evaluating the state of the stock and establish reference points based on methodologies applied on DPF. With these results, fishery management scenarios will be proposed based on RBM that will be discussed widely among dark clam fishers together with the participation of officials from the SRP and the INP. In addition, a dark clam management plan will be prepared for the REVISMEM. This plan will be written in plain language and will include several images and graphics so that they can be used easily by the fishers. No later than the project's third year, the management plan will be adopted by way of a MAE resolution and will be incorporated as an integral part of the RMEP management plan. With CI-Ecuador counterpart funds, the plan will be published and issued to all mangrove concha fishers from the protected area. A digital version of the fishery management plan will be issued to the SIMCE for greater distribution. Monitoring and support in the implementation of the fishery management plans will be led by the

¹¹¹ After the REMGSF lobster management plan is approved.

administration of the REVISMEM with funds from CI-Ecuador through the fourth phase of the ETPS project.

In the third year, co-funded by CI-Ecuador, mangrove concha fishers and staff from the REMACAM will be taken on an investigative visit of the REVISMEM in order to learn about experiences and lessons learned from the preparation process of the fishing management plan. Following, the process will be replicated in the REMACAM.. No later than the beginning of the fourth year of the project, the management plan will be adopted through a MAE resolution and will be incorporated as an integral part of the REMACAM management plan.

Output 2.1.4: A fisheries RBM plan for red crab operating within the Churute Mangrove Ecological Reserve. This system will be constructed simultaneously to the preparation of the documents from the 17 mangrove concessions that will be issued to crab fishers in the REMACH. With GEF funds, technical assistance will be provided in order to support the protected area’s crab fishers and administration in developing a fishery management system. At the beginning of the first year, diagnostic techniques of crab fishing in the REMACH will be performed, the supply chain will be documented, the CPUE level will be calculated and stock indicators will be identified. Also, the feasibility of directly applying or adapting protocol for the participatory sMPAling of commercial catches of crab will be assessed, which was developed by the INP. Following, awareness events will be organized crab fishers and and technical staff from the REMACH will be trained on RBM and basic fishery management. The most appropriate methods for assessing the state of stock will be selected, in collaboration with technical staff from the INP and the REMACH, and applied and reference points based on the available data taking into consideration the methodologies applied in data-poor fisheries will be established

With these results, in close collaboration with the staff from the REMACH, fishery management scenarios will be proposed based on access rights applicable for the reserve. The selected plan will be analyzed with the crab fishers and technical support will be provided to include it in the management plans of the new mangrove concessions that will be granted within the reserve. The crab fishery management plan will be prepared in the REMACH so that, no later than halfway through the second year, the project may be adapted by way of a MAE resolution and so that it may be incorporated as an integral part of the reserve’s management plan. a version will be prepared in a format that can be distributed (i.e., using plain language and with several images) and that will be printed and issued to all crab fishers that operate within the REMACH. A digital version of the REMACH fishery management plan will be issued to the SIMCE for greater distribution.

Output 2.1.5: Twelve fisheries RBM plans implemented in mangrove concessions. In the first two years, GEF funds will be used to develop fishery management models in six mangrove concessions.

Table 6. Concessions of mangrove fishing management where plans shall be applied

Concessionaire	Concession start date (dd/mm/yy)	Concession surface area (ha)	Number of members	Principal fishing resource
----------------	----------------------------------	------------------------------	-------------------	----------------------------

Concessionaire	Concession start date (dd/mm/yy)	Concession surface area (ha)	Number of members	Principal fishing resource
<i>Asociación de Pescadores Artesanales, Mariscadores y Afines "Costa Rica"</i> (Costa Rica Association of Artisanal Fish and Seafood Fishers)	16/08/00	519.79	60	Dark clam
<i>Asociación de Concheros, Crustáceos y Pescadores Artesanales y Afines Las Huacas</i> (Las Huacas Association of Artisanal Fish, Shellfish, and Crustacean Fishers)	29/09/09	925.01	160	Dark clam
<i>CEDECO Pongalillo</i>	29/09/09	482.37	40	Dark clam
<i>Asociación de Cangrejeros Seis de Julio</i> (July Sixth Crab Fishers Association)	31/07/00	1284.81	130	Crab
<i>Asociación de Cangrejeros y Pescadores de Balao</i> (Balao Association of Fish and Crab Fishers)	29/12/07	2653	115	Crab
<i>Asociación de Usuarios Ancestrales de Pesca Artesanal CMPAo Alegre</i> (CMPAo Alegre Ancestral Technique Artisanal Fishing Association)	05/08/10	7042.5	800	Crab

The development of the fishery management models will build upon the experience that concessionaries have gained through their empirical application of community fishing management and monitoring measures. Specialized technical assistance will be contracted to support the six concessionaires and to strengthen their fishery management plans. The main activities in developing the fishery management models in each concession are to include: i.) Documentation and assessment of previous experiences, ii.) Assessment of the state of fisheries and stock using methodologies appropriate for DPF, iii.) Training concessionaires on RBM and the use of reference points, iv.) Developing a participatory model of the fishery management plan to be implemented, v.) Plan implementation and participatory monitoring of the fishery, vi.) A quarterly assessment of progress made and lessons learned, vii.) Meetings

for exchanging experiences among the six concessions and viii.) The systematization of experiences and design of the fishery management model for mangrove concessions. In the project's third and fourth years, with CI-Ecuador cofinancing the fishery management model will be applied in six other mangrove concessions in the Gulf of Guayaquil. CI-Ecuador cofinancing, these experiences and best practices will be documented and systemized and the lessons learned will be identified in order to develop a technical packet that may be applied to other mangrove concessions. All technical documents and management plans will be issued to the SIMCE.

Figura 6. Figure 6. Sites of intervention to develop models of fisheries management.



2.4.3. Component 3. Strengthening of the regulatory framework for the conservation and management of marine and coastal biodiversity.

This third component focuses on strengthening the regulatory framework with regard to: issuing and managing mangrove concessions to traditional users, fishing activities within the protected marine areas and integrating coastal management. These actions are oriented around mainstreaming the conservation of high-value coastal biodiversity within a regulatory framework. Mainstreaming will take place by creating current proposals of the since-expired regulations using participatory processes and through consultation with the following key players: MAE, SENPLADES, SETEMAR, SRP, DIRNEA, GADs and mangrove concessionaires.

Output 3.1.1: Regulation of mangrove concessions updated by MAE with GEF funds in the project's last year. The team will prepare a reform proposal for the regulations that govern the granting and management of concessions for traditional mangrove users (i.e., MAE agreements 129 and 144¹¹²). The consultants will work in participation with the technical staff of the SGMC and with attorneys from MAE's General Judicial Coordination. The review will be integral and inclusive and it will include i.) the practical experiences of the concessionaires and the MAE, and ii.) the lessons learned and best practices of the current project (see result 1.2). The reform will fine-tune the details of applying the Socio Manglar incentive. The main activities to be carried out will include: i.) The design and implementation of a regulatory impact assessment that, in a participatory and local manner, allows for the identification of aspects that need to be reformed in current regulations based on: the experience of current concessionaires, on MAE's institutional management and on the governance of the current plan; ii.) The prioritization of the elements to be integrated or reformed; iii.) Local participatory workshops for detecting the input needed for the reform proposal; iv.) The preparation of the regulatory proposal; and v.) A workshop on the implementation, feedback and approval of the proposal with the MAE. The reform will be issued by way of a ministerial agreement no later than the second quarter of the project's fourth year.

Output 3.1.2: Regulation of fisheries management in MPAs adopted by MAE. Based on the experiences of Component 2, GEF funds will be used to develop a regulatory fishing proposal for protected marine areas of continental Ecuador in the project's third year. The consultants will work together with the technical staff from SGMC, from the National Office of Protected Areas and with the attorneys from MAE's General Judicial Coordination. This regulation will bring the national regulations on protected areas into operation¹¹³ and they will be integrated into the TULAS. This legal instrument seeks to position fishing as a sustainable alternative for local populations associated or connected with protected marine areas. It also seeks to strengthen the institutional role of the MAE as a governing, regulating and management entity in the areas for which it is responsible. The main activities to be carried out include: i.) Identifying key aspects and critical issues that make the integration of fishery management into the regulations of protected natural areas difficult, as well as identifying solution alternatives, ii.) Reviewing the experiences of compared law, iii.) Reviewing the experiences of fishery management models developed in Component 2 of the project, iv.) Creating a plan for the contents of the regulation proposal, v.) Holding participatory institutional workshops in order to gather input information, vi.) Writing the regulatory proposal, and vii.) Holding a workshop on the implementation, feedback and approval of the proposal with the MAE, the

¹¹² Agreement 129 published in Official Registry 283 on September 21, 2010, issuing procedures for the approval and concession of mangrove sustainable use and safeguarding agreements for the benefit of ancestral communities and traditional users. Agreement 144 signed on August 9, 2011, issuing reforms to Ministerial Agreement 129.

¹¹³ i.e., Coding of the forestry, wildlife and natural areas conservation law (Law 2004-017) published in Official Registry Supplement 418 on September 10, 2004.

SRP and with the fishers that operate in the protected marine areas. The regulation will be issued by way of a ministerial agreement no later than the first quarter of the project's fourth year.

Output 3.1.3: National ICM strategy adopted. GEF funds will be used to in the project's first year to prepare a national strategy proposal for integrated coastal management. In Ecuador there is already a series of instruments that were generated by the PMRC that can establish a scenario for working on the issue. Joining the different instruments and previous experiences together (e.g., plans, agendas and ordinances) together with national planning (PNBV and POC), and integrating them under a management model will be a focus of this output. Such planning will allow for follow-up, joint collaboration and inter-institutional systemization with existing regional policies. The main activities that will take place include: i.) An assessment of the current implementation level of existing national and local management instruments (agendas, plans and ordinances), ii.) The identification of key elements that incorporate the national strategy of coastal management, iii.) The establishment of a roundtable with institutional stakeholders, iv.) Holding meetings for identifying and developing institutional and regional issues, v.) Establishing a content proposal for the strategy, and vi.) Holding a workshop on the implementation, feedback and approval of the strategy proposal with institutional stakeholders. During the second and third year of the project, with CI-Ecuador project co financing , SGMC staff will organize analysis areas of the strategy proposal with the players that are part of the CIM. By the end of the third year there should be a final draft that has been agreed-upon by the key players; and no later than the first quarter of the fourth year, the CIM will issue a resolution adopting the national ICM strategy.

Output 3.1.4: Five ordinances for coastal management that articulates the new MPAs. GEF funds will be used to develop a municipal ordinance model that: i.) Ties biodiversity conservation together with human activities that take place in coastal areas under the framework of the responsibilities of the autonomous decentralized municipal governments, and ii.) Complements the management of the MPAs. The main elements to be addressed in the ordinance include: i.) The use and access of beaches and bays, ii.) Waste management and control, iii.) The management of domestic and stray animals, and iv.) Regulations on soil and land use. This type of ordinance will be promoted in the municipalities where the four new protected areas will be created (i.e., Manta, Puerto López, Santa Elena, Playas and Guayaquil¹¹⁴). The main activities to take place include: i.) A situational diagnostic analysis of the state of regulatory developments and institutional arrangements (current ordinances) in the project's five municipalities, ii.) A workshop for identifying common and key aspects for establishing the model ordinance proposal, iii.) A workshop for the participatory approval of common aspects, iv.) The preparation of the ordinance proposal, v.) A workshop-presentation on the initial draft of the model ordinance proposal, vi.) Feedback and changes to the proposal, vii.) A workshop on the implementation and approval of the final version, and viii.) A presentation on the ordinance model to the County Council of each GAD. The SGMC and the Area Representatives will see to it that the municipalities promote the ordinances.

2.4.4. Component 4. Monitoring, assessment, and distribution of information.

The focus of this component is: i.) Monitoring and assessing the project's progress and meeting its performance indicators (ii) Monitoring the risk mitigation measures and identifying new measures in order to prepare for unforeseen risks, and iii.) Identifying lessons learned (including success and failures) resulting from the project's implementation, which

¹¹⁴ The municipalities of Manta, Puerto López and Santa Elena coastal management ordinances that were adopted at the end of the previous decade. Bringing these ordinances up to date will be a focus for these municipalities.

will be distributed regionally and throughout the world and will serve as a project that can be implemented in similar regions.

:

Output 4.1.1: Project M&E system operational, providing constant information on project progress in achieving outcomes and outputs. Between the first and fourth year, the Project Coordinator will provide a quarterly report: the Project Progress Report (PPR). The PPR includes the framework of the project's results together with the respective performance indicators on the following: the project's results and products, baseline and quarterly Targets, the monitoring of the risk matrix, and the identification of potential risks and mitigation measures for reducing unforeseen risks. At the end of each year, the Project Coordinator will provide input data to the Lead Technical Officer (LTO). This data will be used in order for the LTO-FAO to prepare the Project Implementation Review (PIR). The PIR includes the project's results framework together with the results and product indicators, baseline and quarterly Targets, the monitoring of the risk matrix, and the identification of potential risks and mitigation measures for reducing unforeseen risks.

Product 4.1.2: Midterm and final evaluations. Upon 24 months of the project's implementation, a mid-term assessment will take place conducted by an external consultant who will work together with the project team including the FAO-GEF Coordination Unit, the LTO and other partners. At the end of the project's implementation (at 48 months), a final evaluation of the project will take place conducted by an external international consultant under the supervision of the FAO's Independent Evaluation Office and together with the project team, which will include the FAO-GEF Coordination Unit, the LTO and other partners.

Product 4.1.3 At least 3 publications on project best practices and lessons learned. In the project's fourth year, two additional works will be published on best practices and lessons learned, including the project's successes and failures. The specific issues to be addressed in these publications will be identified throughout the project's implementation. All publications will be uploaded to the project's webpage and issued to the SIMCE. A limited number of printed copies will be distributed to government representatives and local partners.

Product 4.1.4: Webpage for information- sharing and exchange of experiences. The project will create its own webpage within the Ministry of the Environment's web portal. The objective of this page will be to provide permanent and current information on the project's progress to different stakeholders and partners involved in the project, as well as to the general public. Additionally, all documents generated by the project will be issued to the SIMCE for their distribution.

2.5 GLOBAL ENVIRONMENTAL BENEFITS/ADAPTATION BENEFITS

The project will contribute to four Global Environmental Benefits (GEBs): 1.) Protecting sea turtle nesting site beaches, 2.) Increasing the surface area of marine and coastal environments that are in conservation, 3.) Improving the management of marine and coastal areas under conservation and their sustainable use plans, and 4.) Supporting the ecological functions of the mangroves.

By creating four MPAs, the project will protect 100 km of beach area that have been identified as important sea turtle nesting sites. It will also work with the corresponding municipalities in order to develop a regulatory framework and practical measures for ICM that will allow for the management of the coastal zone to be united in protecting these beaches.

This will also allow for the surface area of coastal-marine environments under conservation to expand by 15,000 ha. The project will also allow for progress to be made in meeting national Targets as well as Aichi Targets 11 and 12; and it will help Ecuador meet its commitments from the Inter- American Convention for the Protection and the Conservation of Sea Turtles (CIT).

The project will strengthen the integral management of mangrove concessions so that they may sustain their fisheries as well as conserve high-value biodiversity. The project will turn 96,000 ha of mangroves into a community-based sustainable use area.

Additionally, the project will also promote the development of fisheries management with an access rights focus, both within the MPAs and with the mangrove concessions. These efforts will result in a surface area of 169,000 ha under better management: 144,000 ha of which are MPAs that will have improved fisheries management, and 25,000 ha of which are mangrove concessions that will implement fisheries management improvement plans based on RBM. All of this will allow for: i.) Improved effectiveness in the management of protected areas in meeting Aichi Target 11, ii.) The stabilization and recovery of the stocks of five species¹¹⁵ in meeting Aichi Target 6, iii.) Progress to be made in fulfilling the work program on protected areas from the CDB,¹¹⁶ and iv.) Contributions to be made in reversing the deterioration of estuarine food webs and in sustaining the ecological functions of mangroves.

2.6 COST EFFECTIVENESS

The project's strategy was chosen after an analysis of the following alternatives:

In the protection of sea turtle nesting site beaches, a protected area participatory management model was chosen (including GAD management, local stakeholders and control authorities) and was made compatible with the activities in which the surrounding communities engage (the possible categorization of a national recreation area). The application of a strict conservation model was rejected (i.e. preservation) since the analysis demonstrated that this second alternative would have generated great conflicts and incurred greater pressures upon the beaches. It is very likely that an exclusive model would have generated the rejection of the proposal and would have meant the loss of an opportunity to protect these high-value biodiversity sites.

A community management model of mangrove areas will be aimed for through the strengthening of mangrove concessions in order to establish greater effectiveness in the conservation of the areas under their management. The idea of applying a stronger top-down management of the mangroves was ruled out by government entities as previous experience has shown that those groups, that coexist with the mangroves, better know the areas and react quickly in their adaptive management when changes occur.

The idea of managing fisheries using traditional fishing models that focus management on a Maximum Sustainable Yield (MSY) was also dismissed, as decision-making becomes complex among artisanal fishers. A TRP and LRP focused management model was chosen, as they are a simple way of organizing decision-making. Also, the use of stock assessment methodologies and the determination of reference points applied to data-poor fisheries were chosen, due to the fact that there is no adequate information in any of the areas that will be worked on for the application of traditional methodologies. Lastly, the RBM was chosen

¹¹⁵ i.e., crab, dark clam, octopus, lobster and Pacific bearded brotula.

¹¹⁶ Objective 1.1. Create and strengthen national and regional protected area systems within the global network as a part of the contribution for globally agreed-upon goals.

based on the collective rights of TURFs, as positive and promising experiences have occurred in many similar situations throughout the world.

2.7 INNOVATIVENESS

The project will promote the integration of innovative elements in current practices in conserving coastal-marine areas.

One: Promote the full integration of the MPAs under a ICM municipal framework. This has never been tried before in Ecuador. It can be clearly seen that the conservation of sea turtle nesting site beaches depends on the interactions with several human activities that occur in these areas. The project will therefore seek a governing system that allows for the full collaboration of local players and for the integration of municipal planning as well as of the planning of the new MPAs.

Two: Advance the use of TURFs. Mangrove concessions were designed as a tool to protect mangrove forest areas, but some concessionaires empirically developed access right systems for benthic zone fishery resources (i.e., the dark clam and crab). This project will support the subsequent development of the concept based on the existing lessons learned¹¹⁷ with the projection of replicating it in other areas (e.g., open water habitats, MPAs).

Three. Promote the use of fishing management based on access rights. Despite the RBM experiences of the mangrove concessions, this concept has not reached other Ecuadorian fisheries. The SRP has only recently begun to research its potential use. The project will support the implementation of RBM in dark clam and crab fisheries and it will develop RBM pilot projects in lobster, octopus and Pacific bearded brotula fisheries within the MPAs. These experiences will generate many experiences that may serve as catalysts in expanding RBM in the management of the country's fishing resources.

Four. Implement an economic incentive in order to conserve mangroves. There has been much analysis in recent years on the use of economic incentives in the conservation of coastal and marine environments and resources,¹¹⁸ however there are few practical cases. This project will implement a direct economic incentive for mangrove concessions in order to support their maintenance and associated biodiversity. The application of this incentive will generate many experiences that may be applied to other areas.

¹¹⁷ Coello, S., D. Vinuesa & R. Alemán. 2008. *Evaluación del desempeño de los acuerdos de uso sustentable y custodia de manglar de la zona costera del Ecuador* (Performance evaluation of the sustainable use and mangrove watching of Ecuador's coastal zone). *Ministerio del Ambiente del Ecuador* (Ecuadorian Ministry of the Environment) – Conservation International – International Union for Conservation of Nature (IUCN) – IUCN World Commission on Protected Areas – *Programa de apoyo a la gestión descentralizada de los recursos naturales en las tres provincias del norte del Ecuador* (PRODERENA) (Support program for the decentralized management of the natural resources of Ecuador's three northern provinces) – Ecobiotec. Julio de 2008: 52p. + 4 Figures + 17 Tables + 5 Appendixes + 29 maps.

¹¹⁸ Mohammed, E.Y. (ed.) 2014. *Economic Incentives for Marine and Coastal Conservation. Prospects, challenges and policy implications.* Routledge. New York, USA: 296 pp.

SECTION 3 – FEASIBILITY (FUNDAMENTAL DIMENSIONS FOR HIGH QUALITY DELIVERY)

3.1 ENVIRONMENTAL IMPACT ASSESSMENT

GEF project Integrated Management of Marine and Coastal Areas of High Value for Biodiversity in Continental Ecuador is classified under category C, its environmental impact (and associated social impacts) will be minimal or non-existing, because it is aimed at expanding spaces for conservation and protect species of high conservation value. The project will generate several positive impacts:

1. The creation of protected areas has positive environmental effects, because conservation mechanisms will be established in the areas of intervention (in this case, beaches and a mile into the sea). In addition, the protection of marine turtles nesting beaches will positively contribute to sustain populations of threatened species.
2. Strengthen the management of mangrove concessions will also allow maintaining and improving the conservation of areas that are vital to many species (e.g., birds, invertebrates, fishes), and are part of the ecological dynamics of estuaries. Also, the incorporation of specific aspects of biodiversity conservation in the management of mangrove concessions will positively contribute to protect endangered species, such as the crocodile of the coast and sea turtles. Finally, sustainable fisheries in the concessions will allow (i) to maintain populations of dark clam and crab and therefore their ecological role (e.g., recycling of organic matter), and (ii) to provide long-term sources of income and food.
3. Establish fisheries management system in MPAs will allow for the control of strong pressures and recover populations overexploited. In addition, the establishment of closed zones within the zoning of each Marine Protected Area will help restore native biodiversity and protect juveniles of over exploited populations. Finally, the marine space adjacent to the Marine Protected Areas will benefit from the flow of biodiversity and fisheries resources (due to overflow from MPAs), and local fishermen will benefit from a sustainable flow of food and income.

However, considering that project components aims at the creation of new protected areas, mangrove management and fisheries resources management, methodologies should be applied that allow the articulation of conservation actions with local social dynamics. The new protected areas must have a participatory and inclusive approach to positively engage local communities in the long-term conservation of sea turtles nesting beaches and the associated biodiversity. A crucial moment will be the preparation of the management plans for the new MPAs. Mechanisms of participatory management that can be applied to assign specific responsibilities will have to be explored in due course. (e.g., control of cars entering the area, protection of sea turtle nests). In the management of mangrove and fisheries concessions within MPAs, it will be essential to actively involved concessionaires and fishermen, as well as understand and respect their concerns and social dynamics.

3.2 RISK MANAGEMENT

During the design and preparation of the project, risks have been identified, analyzed and mitigation measures have been incorporated in the project design. With the support and supervision of FAO and the Ministry of the Environment, CI-Ecuador will be responsible for the daily management of these risks and the effective implementation of mitigation measures. CI-Ecuador will also be responsible for monitoring the effectiveness of these measures and adjusting mitigation strategies as required, as well as identifying and manage any risks not foreseen in the preparation phase of the project, in collaboration with FAO, MAE and other partners involved in the project.

The Project Progress Report (see section 4.5.3 below) is the main tool for project risk monitoring and management. The reports include a section on systematic follow-up on risks and mitigation actions identified in previous reporting periods and another section for the identification of eventual new risks or risks that still need attention, their rating and mitigation actions, as well as the responsible for monitoring those actions and the expected timeline. FAO will monitor the project risk management closely and follow up if needed by providing support for the adjustment and implementation of risk mitigation strategies. Reporting on risk monitoring and rating will also be part of the annual Project Implementation Review (PIR) prepared by FAO and submitted to the GEF Secretariat (see section 4.5.3).

3.2.1 Risks and mitigation measures

The following table summarizes the risks identified, it's rating and mitigation measures incorporated into the design of the projects components:

Risk statement	Likelihood ¹¹⁹	Mitigation measures
Lack of interest of municipal Decentralized Autonomous Government to preserve its waterfront and invest in improving their waste and sewage management systems, stray animal's control and waterfront infrastructure ordinance.	High	The first year, the project will focus on the awareness and engagement of citizens in areas where new MPA will be established. There will be local teams to call the participants, clear doubts, provide reliable information and promote the organization and creation of management committees for the MPAs
Fishermen working inside the MPA refuse to be part of the fisheries management schemes, because they're used to free access systems	High	Awareness-raising, information and involvement of fishermen. Initially the main focus would be on sensitizing fishermen of the five MPAs on the State of fisheries resources and the damage that the free access system causes. Then information on fisheries management systems based on usage rights will be provided and experience in mangrove

¹¹⁹ Estimate of likelihood: **High**, **Medium**, or **Low**, as per the FAO Project Cycle Guidelines.

		concessions will be displayed. Finally, participatory processes will be carried out to assign rights-based fisheries management systems along with fishermen in each Marine Protected Area.
Reluctance to sustainable management on coastal areas because owners of adjoining lands think that its ownership and access to the beach might be affected.	Medium	Awareness-raising with focus on landowners at the waterfront and their involvement in participatory planning processes.
Reluctance of some local residents to protect the nests and sea turtles because of ingrained habits such as using Bush meat.	Medium	Awareness and involvement will be particularly important to mitigate this reluctance. In the first year there will be emphasis on sensitization of the communities that are known for using sea turtles as Bush meat.
Difficulties in inter-institutional coordination among the entities associated with coastal areas management under sustainable management	Medium	Component 1 approach will address this risk by establishing management processes among all the sectors that are operating in conservation areas under sustainable management
Reluctance of some population segments to comply with current regulatory framework regarding marine biodiversity conservation and management.	Medium	There will be participatory and transparent processes to analyze the elements that are an integral part of the marine biodiversity conservation and management regulatory framework. A technical team will provide relevant information and inputs related to specific cases of benefits derived from marine and coastal biodiversity conservation. A FAO specialist will give inputs related to benefits achieved with responsible fishing and fisheries management that restricts free access to fishery resources.
Restricting mangrove concessions inside protected areas has not been eliminated	Medium	The Ministry of Environment has indicated that before the project starts, it will emit a Ministerial Agreement reforming the existing regulation.
Mangrove concessions have Limited financial sustainability	Medium	Mangrove concessions financial sustainability depends on the diversification of sources of income. The design of the financial support mechanism (Socio-manglar) for mangrove concessions, including a financial strategy, will identify diverse

		sources and financing strategies that mitigate the potential impact of this financing risk, which will be researched, developed and applied. In addition, the project will strengthen the capacity of the persons that are in charge of concessions on the use of tools and financial strategies for the achievement of profitable conservation results.
The lack of clear and effective management rules and procedures, and the inadequate co-participation of users in their implementation, may cause conflicts and failures to protect ecosystems.	Medium	Strengthening of the regulatory framework in specific topics, such as : (i) A proposal to traditional users to update the regulations of mangrove concessions; (ii) A proposal for regulation of fishing in MPAs; (iii) proposal for national strategy on integrated coastal management; (iv) Ordinance model of Coastal management
Modification of dynamics and coastal morphology as a result of climate change and the rise of sea level	Low	The Review of the baseline will contain the physical aspects (i.e. morphology and dynamics of the coast) of the areas where the new MPA will be established. The monitoring of the management plan of each MPA will include: (i) Beach profiles allowing to follow the erosion processes – sedimentation; and (ii) Climate Change indicators. In addition, the participatory planning process will include discussion on the potential impacts of climate change and related adaptation measures.

3.2.2 Fiduciary risk analysis and mitigation measures

As requested by the Ministry of Environment, GEF resources will be executed by Conservation International Ecuador through an Execution Agreement to be signed by FAO and CI. An independent assessment of CI-Ecuador's fiduciary standards is currently undergoing to identify any fiduciary risks and related mitigation actions. The assessment and the agreed action plan for risk mitigation will be finalized and agreed upon before the signature of the Execution Agreement. The disbursement of funds will be subject to compliance with risk mitigation actions.

According to the information given by CI during the design phase of this project, this organization has the last five years handled an annual average budget of USD 2 million USD. Among its major donors are: Walton Family Foundation, 5 Oceans, Helmsley, Foundation RARE, Foundation Swift, MacArthur Foundation, BioCAN (Andean Community of Nations), International Pole and Line Foundation, CPPS (Permanent Commission of South Pacific), Municipality of the Metropolitan District, Municipality of Ambato, UNESCO, Global Conservation Fund GCF, and Mulago Foundation.

CI Ecuador's administration and financial team currently consist of five people: Operations Manager, donations Coordinator, General accountant, assistant accountant, and

Administrative Coordinator. This staff works directly with and is backed up by CI headquarters personnel located in Washington. Their work is based on their Financial Manual. CI headquarters has recently passed the GEF assessment of their fiduciary standards and has been accredited as a GEF implementing agency.

The accounting and financial system that CI Ecuador uses is the same that's used by CI headquarters in Washington: Oracle Financials allows for tracking expenses and income from donors and cost centers, and it is parameterized by objectives, activities or results. In addition, CI Ecuador uses GEM "Grants Enterprise Management", which allows for the management and administration of external grants, internal grants, consulting and service contracts. All generated documentation and products are stored in this system.

The Operations Manager with the support of the operations team, monitors permanent the execution of projects, prepares reports to donors and ensures compliance with internal, institutional policies and the requirements of donors.

In terms of procedures, CI has an operations manual establishing the Organization's standards, policies and procedures including roles and responsibilities. Being the whole organization's manual, it is available to staff via the intranet. These policies support staff's daily work providing a baseline for project administration and management. In addition, CI Ecuador has a manual adapted to the national legal, accounting and tax legislation, which allows for connecting the global vision to Ecuador's reality.

CI's acquisition policy applies to all goods and services that it acquires. Before purchasing, CI reviews the donor's policies and the procedure and looks for at least three bids, if the amount exceeds the USD2.000.

In order to hire consultants, CI has two mechanisms: direct invitation and public tender. The staff of the project requiring the consultancy will prepare the terms of reference and the budget required, and then these are approved by the Executive Direction and the Operations Management. Direct invitation is used in cases of recognized specialists or re-employment of staff who have previously worked with CI. Public tenders are based on proposals that have been published or press announcements that are previously reviewed by a Committee qualifier. In both cases, the Executive Director has the final decision.

CI has also contracts or subcontracts with other NGOs for the achievement of products.

SECTION 4 – IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

4.1 INSTITUTIONAL ARRANGEMENTS

The Food and Agriculture Organization of the United Nations (FAO) will be the GEF Implementing Agency. The Ministry of Environment of Ecuador (MAE), Conservation International Ecuador (CI Ecuador) and the Humanist Institute for Cooperation with Developing Countries (HIVOS) will be the Project Executing Partners. The mangrove concessionaire organizations (table 5), the municipal governments of Manta, Puerto Lopez, Santa Elena, Playas and Guayaquil, the Provincial Government of Guayas, the Inter-Institutional Sea Committee are other project partners and beneficiaries. International cooperation (GIZ, UNHCR), national (NAZCA, FAN, CEDEAL) and international NGOs (WildAid) will be supporting the process

The MAE will be the lead project counterpart and CI-Ecuador will be the Executing Partner with HIVOS as co-executing partner. The three project partners will be responsible for ensuring coordination of the four project components, as well as coordination and collaboration with FAO, the beneficiaries and other partners. MAE will be responsible for decision-making, providing guidance and supervising the overall execution of the project. As per request of MAE¹²⁰, CI Ecuador will be in charge of the technical-programmatic, administrative and financial execution of the project, through an execution agreement with FAO. Through a subcontract with CI-Ecuador, HIVOS will be responsible for the implementation of project activities in the Cayapas-Mataje Mangrove Ecological Reserve (REMACAM), in close coordination with the Provincial Direction of MAE in Esmeraldas.

The MAE is the National Environmental Authority and the State's agency responsible for designing environmental policies and coordinating strategies, projects and programs for the protection of ecosystems and the sustainable use of natural resources. It proposes and defines the standards for adequate environmental quality, with a development model based on the conservation and proper use of the country's biodiversity. It also encourages the participation of all stakeholders in environmental management through coordinated efforts aiming to strengthen capacity of central and local governments, for the democratic and decentralized management of environmental issues. Various civil society stakeholders are included: universities, research centers, community based organizations, NGOs. MAE is also responsible for promoting integrated coastal management and ensuring the conservation and sustainable use of mangroves, through the MAE Coastal and Marine Management Undersecretariat, located in Guayaquil.

Conservation International is an international non-governmental, non-profit, public benefit organization founded in 1987, organized and ruled by the laws of the State of California, U.S.A. CI-Ecuador was established in Ecuador in 2001¹²¹. CI Ecuador works with numerous partners on the conservation and sustainability of high value biodiversity, along the coastal plain, and at sea. The CI supported Tumbes-Chocó-Magdalena and Tropical Andes "hotspots" combine reforestation, species protection and carbon sequestration to deliver multiple benefits to the region. CI projects also protect Amazonia and the Galapagos marine ecosystems. The focus of CI-Ecuador's work is strengthening protected areas management plans and creating

¹²⁰ Letter MAE-D-2014-0133 of March 6 2014.

¹²¹ Basic Agreement of Cooperation between the Government of Ecuador and C.I. signed on April 6, 2001 and published in the Official Gazette number 323 from May 10 2001.

new protected areas. In 2008 alone, four new coastal protected areas were created by the MAE.

The Humanist Institute for Cooperation with Developing Countries (HIVOS) is a Dutch non-governmental organization established in 1968 and inspired by humanist values. HIVOS office in Ecuador was established in 2009¹²². HIVOS promotes biodiversity business as a promising approach to deal with the twin challenges of sustainable biodiversity management and social development. They foster activities that have the potential to provide substantial biodiversity and socio-economic benefits in addition to financial returns. HIVOS' biodiversity business programme aims at tackling bottlenecks like capital flows and create a sense of urgency for the development of biodiversity businesses.

FAO, MAE, CI- Ecuador and HIVOS will collaborate with other GEF projects as well as programmes and projects financed by other donors or government funding, where synergies with this project can be found. Collaboration will be undertaken through: (i) Direct communications between GEF agencies and executing partners from other programs and projects; (ii) exchange of information and dissemination material among projects; and (iii) participation in forums and mechanisms for interagency coordination on policies and action plans for the promotion and conservation of marine and coastal biodiversity, with representatives of national, provincial and municipal institutions, local community organizations and other civil society organizations. In order to guarantee an effective coordination and collaboration between different initiatives, specific coordination responsibilities have been assigned to the Project Management Committee (see below) and included in the terms of reference of the Technical Chief, which results shall be explicitly reflected in the Project Progress Reports (PPRs).

In particular the project will develop special collaboration with the following projects, among others:

- 1) The GEF project, "*Conservation of Coastal and Marine Biodiversity in Ecuador*" implemented by the Inter-American Development Bank and executed by MAE will generate useful information for the management of protected areas and mangrove concessions that are included in this project. Coordination mechanisms will be established in order to promote synergies and exchange of experiences that contribute to integrated coastal management and to the conservation and sustainable use of marine and coastal biodiversity.
- 2) The Small Grants Program (SGP), which is funded by GEF and implemented by the United Nations Development Program (UNDP). In the fifth operational phase (2012-2014) most of the allocation is intended at the conservation of biodiversity in four ecosystems: Moorland, dry forest, mangrove and tropical humid forest. The SGP implements the FSP "*Our Corridors for Good Living*" (#4375) with the objective of promoting social and economic connectivity and it includes two mangrove areas: Estuary of Chone river- La segue; and Estuary of Portoviejo river and wildlife refuge Corazon island and Fragatas. Initiatives of artisanal fishing and harvesting of red crab and dark clam are financed in these areas.
- 3) The project "*Updating of the National Biodiversity Strategy of Ecuador and its Plan of action for the implementation of the Strategic Plan for Biological Diversity for 2011-2020 and the Aichi goals*" funded by GEF, implemented by UNDP Ecuador and executed by MAE. The objective of the project is to integrate the obligations of the

¹²² Basic Agreement on Technical Cooperation and Operation between the Government of Ecuador and HIVOS, signed on July 15, 2009 and published in the Official Gazette number 36 from September 29, 2009

country to the CBD in its national development and sectorial planning frameworks. The project started in October 2012 and will end in 2014. To ensure coordination between both proposals, steps have been taken so that this project supports activities for the implementation of the plan of action, regarding marine and coastal biodiversity.

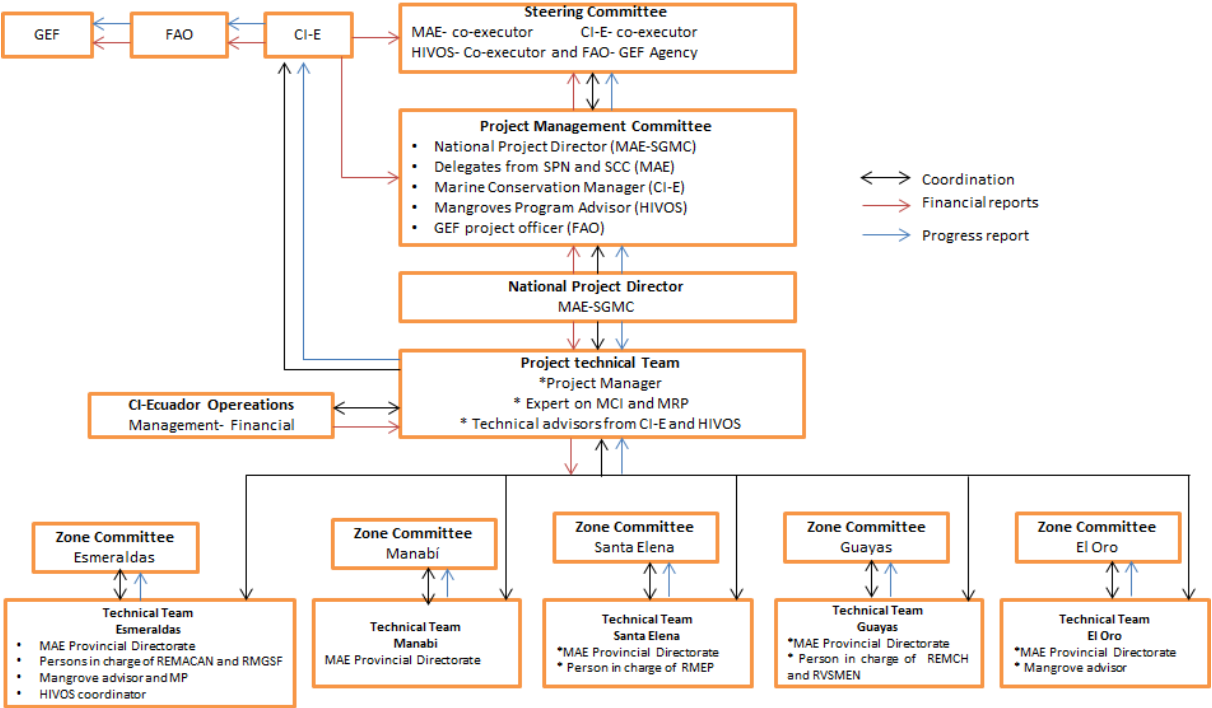
- 4) The project "*Sustainable management of biodiversity and water resources in the corridor Ibarra-San Lorenzo*", funded by GEF, implemented by the Territorial Network-San Lorenzo and executed by MAGAP and IFAD, aims to promote the conservation of biodiversity as well as the sustainable management of forests and land, in the corridor Ibarra-San Lorenzo, to preserve and improve the provision of environmental services in the area, reduce poverty and promote social inclusion for the benefit of indigenous peoples and local communities. This project will be completed in 2017 and includes, among other actions, reforestation of mangroves on the estuary of the rivers Santiago and Mataje (i.e., REMACAM). Coordination mechanisms will be established in order to promote synergies and exchange of experiences that contribute to integrated coastal management and the conservation and sustainable use of marine and coastal biodiversity in the North of the province of Esmeraldas.
- 5) The project "*Financial Sustainability of Protected Areas from the SNAP*", financed by GEF, implemented by UNDP and executed by MAE. Its objective is to improve the financial sustainability of the SNAP and their subsystems. The project includes demonstration of financial sustainability in seven areas of the PANE which include the REMGSF
- 6) The global project "*Standardized Methodologies for carbon accounting and the assessment of ecosystem services in Blue Forests*" funded by GEF, implemented by UNEP and executed by GRID-ARENDAL. The project will generate a methodology and information about carbon sequestration in coastal environments and ecosystem services. The project includes a pilot project in Ecuador, to be executed by CI-Ecuador in coordination with MAE, with activities for the evaluation of mangroves' ecosystem services and the strengthening of mangrove concessions.
- 7) The regional proposal on mangroves in the marine landscape of the Eastern Tropical Pacific, recently submitted to GEF, to be implemented by CI and co-executed with UNESCO and the environmental authorities of Ecuador, Colombia, Panama and Costa Rica, will promote the exchange of experiences in conservation and sustainable use of mangrove forests, and the development of policies and regional plans of action. The project will use the regional experiences that contribute to the sustainable management of mangroves and will contribute to the experiences and lessons learned in Ecuador.

4.2 IMPLEMENTATION ARRANGEMENTS

FAO will be the GEF Agency responsible for supervision and provision of technical guidance during project implementation. This project is the product of a strategic alliance between MAE and CI-Ecuador, based on shared interest and experience on marine and coastal ecosystem integrated management. This alliance is strengthened with the inclusion of HIVOS, which will contribute with its expertise in conservation and sustainable use of mangrove forests in the province of Esmeraldas. (Figure 4.1: Institutional Arrangements for Project Execution). A **Project Steering Committee (PSC)** will be set up to provide oversight of and coordinate the planning of project implementation, and will comprise the MAE, CI Ecuador, HIVOS (highest authorities of these institutions) and it will be responsible for making decisions about the overall management of the project and for maintaining the strategic focus of the specific project operational tasks. Similarly, a **Project Management Committee (PMC)** will be created for supervising the day-to-day of project activities in collaboration

with five **Zoning Committees (ZC)**, one in each coastal province (Esmeraldas, Manabí, Santa Elena, Guayas and El Oro). The management of the project will be carried out through the institutional structure that is presented in figure 4.1.

Figure 4.1 Project Execution Institutional Structure



4.2.1 Roles and responsibilities of executing and co-executing partners

The **Ministry of Environment (MAE)** is the **GEF operational focal point** in Ecuador and responsible for coordinating the programming of GEF resources and supervising the GEF project portfolio in Ecuador, in collaboration with the GEF implementing agencies and project executing partners. The specific responsibility of the MAE in this project will be monitoring the annual Project Implementation Reviews (PIR) and will be invited to the mid-term and final evaluations of the project. The Minister of Environment - or the person designated by him or her - will chair the steering committee and its planning and tracking project annual meetings.

MAE will also be the **lead project counterpart** for project execution. Through its Natural Heritage Undersecretariat (SPN), Coastal and Marine Management Undersecretariat (SGMC) and the Climate Change Undersecretariat (SCC), MAE will be responsible for the overall supervision of the project, and the approval of funds transfer request, and financial and project progress reports prior to the submission to FAO. The SPN will be responsible for the implementation of economic incentives for the conservation and sustainable use of mangroves, through the creation of the chapter "SOCIO MANGLAR" of the National Programme of Incentives "Socio Bosque" (component 1), the supervision of fisheries management activities in protected areas of the PANE (component 2), and the development of policy instruments (component 3). The SGMC will be responsible for the activities of integrated coastal management, which will be developed with provincial and municipal

governments as well as the creation and strengthening of the mangrove concessions (component 1). Meanwhile the SCC will support the incorporation of mitigation and adaptation measures to climate change in project activities, based on the vulnerability analysis that is being developed in the coastal area (component 1).

A Director from MAE/SGMC will be designated as the **National Project Director (NPD)**, responsible for coordinating activities with all MAE departments linked to the project components. Further, the NPD will be responsible for reviewing funds transfer requests and financial and project progress reports elaborated by CI before submission to FAO based on the AWP/B, and for guiding and giving advice to the Project Manager and the Project Technical Team regarding Government policies and priorities. S/he will participate in the Project management Committee and coordinate activities with MAE Provincial Directions in Esmeraldas, Manabí, Santa Elena, Guayas and El Oro, and those in charge of PANE protected areas participating in the project.

CI – Ecuador will be the **Project Executing Partner**, responsible for the technical-programmatic, administrative and financial execution of the project. The execution will be under the guidance and supervision of the PMC and NPD. CI-Ecuador will enter into an Execution Agreement with FAO allowing for the purchase of goods, minor works, and services needed to execute the project. FAO will ensure that the CI-Ecuador rules and procedures for project execution are acceptable in accordance with FAO rules and regulations and GEF minimum fiduciary standards, and CI-Ecuador will follow in particular rules defined in the Execution Agreement. The Execution Agreement will outline in details the roles and responsibilities of CI-Ecuador and procedures with respect to financial management, procurement, recruitment, project progress reporting, financial reporting and audit, copyright, and other legal aspects of collaboration.

CI-Ecuador will use its own financial management, output and outcome monitoring, and procurement systems and procedures adjusted to FAO Rules and GEF minimum fiduciary standards. CI-Ecuador will submit procurement and contract documentation for prior clearance by FAO (see section 4.4 below), and six-monthly statements of expenditures and cash transfer requests (see section 4.3.6) based on the updated Annual Work Plan and Budget (AWP/B) including a detailed budget for the following six months period, and annual audited financial statements to the FAO Representation in Ecuador. Further, CI-Ecuador will prepare and submit to the FAO Representation Project Progress Reports (PPR), Annual Work Plans and Budgets (AWP/B), and all documentation needed for the preparation of the annual Project Implementation Review (PIR) (see section 4.5.2).

The technical team of CI-Ecuador will participate in the project technical team and provide technical assistance in the planning, execution, review and systematization of the outputs generated by the project. During the project execution, there will be continuous communication, coordination, strengthening and exchange of experiences between CI-Ecuador and MAE, both at the operational and technical level, as it is shown in the institutional structure of the project (Figure 4.1).

For project execution CI-Ecuador will hire, with GEF funds, a **Project Manager (PM)**, a Specialist on Integrated Coastal Management and a specialist on Fisheries Resources Management, whom will be based in MAE/SGMC in Guayaquil, and a Mangroves Management technician which will be based in MAE Provincial Direction El Oro, in Machala. The PM will be responsible for the day to day project execution, provide technical expertise and review the experts, technical advisors, consultants and other sub-contractors products. PM

will be through a competitive process, with the participation of FAO and MAE as part of the selection panel.

The PM will be in charge of project daily management and technical supervision including: i) coordinate and closely supervise the implementation of project activities; ii) day-to-day project management; iii) coordination with related initiatives; iv) ensuring collaboration between the participating national, provincial and local institutions and organizations; v) implement and manage the project M&E plan and its communication program; vi) prepare PPRs, containing information on the activities carried out and the progress in the achievement of outcomes and outputs; vii) organize annual project workshops and meetings to monitor project progress and prepare the Annual Work Plans and Budgets (AWP/B), viii) submit PPRs together with the AWP/B to the Project Management Committee (PMC) for approval and presentation to the Project Steering Committee (PSC) and FAO; ix) act as secretary to the PMC, PSC, and Steering Committees; x) supporting the preparation of PIRs, mid-term and final evaluations. Moreover, following FAO rules and regulations and in accordance with the Project Document and the AWP/Bs, the PM will assist the NPD in the identification of targeted expenditures and disbursements that should be requested to CI for timely project execution.

CI Ecuador Executive Director will participate in the PSC. CI Ecuador Marine Conservation Manager, which is based in Guayaquil, will participate in the PMC and will provide direct technical assistance to the PM and to the officials of MAE/SGMC, Provincial Directions and other MAE departments, especially in issues related to Fisheries Resources Management components and the Legal Framework update. He will also participate in the ZC meetings in order to facilitate the exchange of experiences and to systematize lessons learned from the project.

CI-Ecuador technical advisors on Protected Areas, Spatial Planning, Environmental Policies and Environmental Communication, will provide technical assistance to several departments in MAE, at national, provincial and local levels, and to the GADs that will participate in the project. They will also participate and will provide technical support and facilitation in the ZC meetings. Specifically, the Environmental Policies and Protected Areas Manager will participate in the technical review of TdR, reports and products developed in component 1 (especially for the creation of new conservation areas) and component 3 (regulatory framework). The Spatial Planning Manager will support the design and implementation of the Geographical Information System, which will be part of the Project's Monitoring and Evaluation System. It will also generate the necessary Cartographic Information for the creation and management of new Conservation areas (component 1). The Communications Coordinator will be responsible for the design and implementation of the project's communication strategy, including the organisation of events and the development of publications that will allow the systematization of the project's results and lessons learned. Other CI-Ecuador officials will also participate, as counterparts, in the technical review of TdR, reports and products developed in the project's components.

The **HIVOS** will be the **Co-executing Partner** responsible for the execution of the project activities in the Cayapas-Mataje Mangrove Ecological Reserve (REMACAM) at the north of the province of Esmeraldas, in close coordination with the Provincial Direction of MAE in Esmeraldas, and through a subcontract with CI-Ecuador¹²³. The technical staff from HIVOS

¹²³ HIVOS was selected by MAE and CI-Ecuador as co-executor of the project in the province of Esmeraldas, due to (i) its experience in the execution of conservation projects and sustainable use of mangrove forests in the REMACAM ;(ii) their technical and administrative capacity in the North of the province of Esmeraldas (municipalities of San Lorenzo and Eloy Alfaro), and (iii) the relationship with local actors in the area.

will participate in the project technical team and provide technical assistance in the planning, execution, review and systematization of the products generated in the REMACAM. HIVOS will participate in the PMC and the PSC (see below) and will also collaborate with CI-Ecuador in the elaboration of the AWP/B, PPR, financial reports, and inputs for the PIR

FAO, MAE and CI-Ecuador will supervise the execution of the tasks to be implemented by HIVOS at REMACAM. Technical, project progress and financial reports submitted by HIVOS will be approved by the PM and CI-Ecuador operations team and added to the project progress report. HIVOS technical team and the Mangroves and Protected Areas Management Specialist, that is to be hired by HIVOS with GEF funds, will be based in MAE Provincial Direction in Esmeraldas. The team will provide technical assistance to MAE's office in Esmeraldas, to REMACAM's technical team and to the GADs of Esmeraldas that will participate in the project. They will also participate in the ZC meetings (especially the ZC for Esmeraldas) in order to facilitate the exchange of experiences and systematize the project's lessons learned. Specifically, the Mangroves Program Advisor and the Shell Regional Project Technical Coordinator in Esmeraldas will support the Mangrove Concessions Strengthening Process and the implementation from an organizational point of view of the Fisheries Management Program in REMACAM. They will also participate in the technical review of TdR, reports and products developed in component 1 (Mangrove Concessions renewal and strengthening) and component 2 (design and implementation of the Concha Prieta Management System) in relation to REMACAM. HIVOS team will work in close coordination with CI – Ecuador technical advisors on Marine Conservation, Environmental Policies and Protected Areas, Spatial Planning and Environmental Communication.

Project decision-making mechanisms

The **Project Steering Committee** will take decisions on the overall project management and will be in charge of ensuring the project strategic approach. The PSC will be chaired by the Minister of Environment or his/her delegate, the Executive Direction of C.I.- Ecuador, the Representative of HIVOS in Ecuador and the Representative of FAO Ecuador or his/her delegate. It will hold at least one meeting per year and its functions include: (i) carry out general monitoring of the project progress and the achievement of expected results through the PPR; (ii) decisions regarding the organization, coordination and practical execution of the project; (iii) facilitate cooperation between FAO, MAE, CI and HIVOS and the parties involved in the project and the support of the project at a local level; (iv) promote the exchange of information on other current or planned activities to facilitate collaboration between this project and other programs, projects and initiatives related to integrated coastal management and the conservation and sustainable use of marine and coastal biodiversity; (v) provide co-financing information in a timely and effective manner; and (vi) review the PPR and semi-annual financial reports and approve AWP/B, as well as the review and taking actions on audit and evaluation reports, if needed.

For the execution and operational coordination of the project a **Project Management Committee (PMC)** shall be established, which will be responsible for: (i) guide project implementation as per the AWP/B; (ii) timely achievement of project outcomes and outputs; (iii) effective and efficient use of resources allocated as per the project document; (iv) planning project activities, giving guidance and advice to the NPD; (v) provide technical advice to the PSC; (vi) advise the NPD on other on-going and planned activities facilitating collaboration between the Project and other programmes, projects and initiatives. The PMC may also be involved in technical evaluation of project progress and outputs, and eventual development of an agreed adjustment plan in project execution approach, if needed. The PMC will include the MAE/SGMC NPD, and included a delegate of the Natural Heritage Undersecretariat, a

delegate of Climate Change Undersecretariat, the Marine Conservation Manager from CI-Ecuador, the Mangroves Program Advisor from HIVOS and the GEF Project Task Manager from FAO. The Project Manager (PM) will be the secretary of the PMC.

During the first half of the project, five **Zoning Committees (ZCs)** will be established (ZC), one in each coastal province (Esmeraldas, Manabí, Santa Elena, Guayas and El Oro) to facilitate the coordination and collaboration with other partner institutions, and promote the participation and the exchange of knowledge and experience with local organizations. The PMC, in coordination with the respective MAE Provincial Directions, will identify the institutions and local organizations that will be included in the ZC in each province. The ZC will include representatives from the provincial and municipal GADs, fishermen's organizations, users of mangroves associations, universities and local NGOs. The ZC will meet at least twice a year to plan local project activities, review the project progress, and facilitate the exchange of experiences and lessons learned from the project with institutions and local organizations.

Project technical Team

The Project Technical Team will include:

a) GEF-financed Staff that will be hired by CI- Ecuador or HIVOS

To be located at MAE Coastal and Marine Management Undersecretariat office in Guayaquil:

- A Project Manager (PM) to direct and oversee the daily management of all project components, and coordinating the execution of component 3. (Full time);
- A specialist in Integrated Coastal Management to coordinate the execution of component 1. (Full time);
- A specialist on Fisheries Resources Management to coordinate the execution of component 2. (Full time);

To be located in MAE Provincial Direction in Esmeraldas:

- A technician in Mangroves Management and Protected Areas will provide technical assistance for the execution of components 1 and 2 in the REMACAM. (Full time);

To be located in MAE Provincial Direction in El Oro:

- A technician in Mangrove Management will provide technical assistance for the execution of component 1. (Full-time).

b) CI-Ecuador and HIVOS staff partially financed with GEF resources

In Guayaquil

- CI-Ecuador Marine Conservation Manager will provide technical assistance for the execution of components 1 and 2. (Part-time).

In Quito

- CI-Ecuador's Environmental Policies and Protected Areas Manager will provide technical assistance for the execution of components 1 and 3. (Part-time).
- CI-Ecuador's Communications Coordinator will provide technical assistance in the design and execution of the project's communication strategy. (Part-time).
- HIVOS's Mangroves Program Advisor will provide technical assistance for the execution of components 1 and 2 in the REMACAM. (Part-time).

c) **Staff covered by cofinancing from MAE, CI-Ecuador and HIVOS:**

In Guayaquil:

- Regulations and Marine and Coastal Projects from MAE Marine and Coastal Management Undersecretariat, (Part-time).
- Management and MAE Marine Coordination from the Marine and Coastal Management Undersecretariat. (Part-time).
- A technician in Mangroves Concession Management from MAE Marine and Coastal Management Undersecretariat. (Full-time).
- The person in charge of the MAE Churute Mangrove Ecological Reserve.(Part-time).
- The person in charge of MAE El Morro Wild-life Refuge. (Part-time).

In Esmeraldas:

- The person in charge of MAE Cayapas-Mataje Mangrove Ecological Reserve. (Part-time).
- The person in charge of MAE Galera- San Francisco Marine Reserve. (Part-time).
- The Technical Coordinator in Esmeraldas of the Shell Regional Project from HIVOS in Ecuador, (Part-time).

In Quito:

- A technician from MAE Natural Heritage Undersecretariat. (Part-time).
- The Socio-economic Monitoring Coordinator from the National Incentives 'Programme "Socio Bosque". (Part-time).
- CI-Ecuador Executive Director (Part-time).
- CI-Ecuador Technical Manager (Part-time).
- CI-Ecuador Environmental Services Manager (Part-time).
- HIVOS Ecuador Representative(Part-time).

4.2.2 Roles and responsibilities of the GEF agency

FAO will be the GEF Agency of the Project and will supervise and provide technical guidance for the overall implementation process. Administration of the GEF grants will be in compliance with the rules and procedures of FAO, and in accordance with the agreement between FAO and the GEF Trustee.

As the GEF agency for the project, FAO will:

- Manage and disburse funds from GEF in accordance with the rules and procedures of FAO;
- Enter into an Execution Agreement with CI-Ecuador as the national executing agency for the provision of services to the project;
- Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers and the rules and procedures of FAO;
- Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned coastal marine biodiversity conservation and mangrove fisheries management;
- Carry out at least one supervision mission per year; and
- Report to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, on project progress and provide financial reports to the GEF Trustee.

The FAO Representative in Ecuador will be **the Budget Holder (BH)** and responsible for the management of the GEF resources and all aspects in the Execution Agreement that will be

signed between FAO and CI-Ecuador. As a first step in project start-up, the FAO Representation in Ecuador will establish an interdisciplinary Project Task Force (PTF) within FAO to guide the implementation of the project. In consultation with the NPG, MAE, the FAO Lead Technical Officer (LTO) and the FAO-GEF Coordination Unit in Investment Centre Division (TCI) (see below) the FAO Representative will in particular be responsible for: (i) disbursement of GEF funds to CI-Ecuador based on satisfactory reporting on project progress and statement of expenditures (see section 4.3.6 on disbursements and section 4.5.3 on reporting); (ii) review of financial reports and supervision of CI-Ecuador's financial management and use of resources (see section 4.3.6 on financial management and section 4.5.3 on reporting), including clearance of Budget Revisions in consultation with the FAO LTO for submission to the GEF Coordination Unit for approval; and (iii) supervision of contracting and procurement processes executed by CI-Ecuador (see section 4.4).

The FAO Representative will, in consultation with the FAO Lead Technical Unit (LTU, see below), the LTO and the FAO-GEF Coordination Unit, give no-objection to AWP/B submitted by the PMC. Disbursement of GEF funds for the provision of goods, minor works, and services to the project will be carried out by the FAO Representative in accordance with the provisions of the Execution Agreement. The disbursement will be carried out upon submission by the CI-Ecuador, via MAE/SGMC, to the FAO Representation of six-monthly financial statements of expenditures, procurement and contract documentation, and disbursement requests based on an updated AWP/B including detailed budget for the following six months period to be cleared and approved by the Representative. Further, the disbursements are also subject to submission of a PPRs to be approved by the FAO LTO. The Budget Holder will submit the financial statement of expenditures, the disbursements requests, and the PPR to the GEF Coordination Unit for clearance and uploading on the FPMIS before the disbursement can be finally approved by the Representative.

The **FAO GEF Project Task Manager (PTM)** will, under the direct supervision of the FAO Representative in Ecuador and in consultation with the LTO and the GEF Coordination Unit, support the FAO Representative in the supervision of project management and progress, procurement and contracting processes, and in the provision of technical guidance to the project, in close consultation with the LTO and the interdisciplinary Project Task Force. The PTM will be paid from GEF fee resources and will have the following main tasks:

- Review and provide comments to PPRs prepared by the CI-Ecuador/PM, and submit them to the BH and the LTO for approval and subsequently to the FAO-GEF Coordination Unit for their final clearance and uploading to the FPMIS.
- Participate in the annual project progress review and planning workshops; review and provide comments to the AWP/B and recommend its approval to the FAO Representative, in consultation with the LTU, LTO and the FAO-GEF Coordination Unit.
- Review the contracting and procurement documentation for those contracts and procurements to be financed by GEF resources, and recommend their approval to the FAO Representative, in consultation with the LTO and the FAO-GEF Coordination Unit.
- Review project financial statement of expenditures on GEF resources and Cash Transfer Requests of GEF resources in accordance with the AWP/B and previous Cash Transfer Requests submitted by CI-Ecuador and advise the FAO Representative on

his/her clearance of statements of expenditures and approval of cash transfers in consultation with the LTO and the GEF Coordination Unit

- Review the co-financing reports submitted annually (June) by CI-Ecuador.
- Undertake periodic supervision missions and support the results-based project management, and facilitate the provision of technical guidance by FAO;
- Support the LTO in preparing the annual PIR report by preparing the first draft;
- When requested by the FAO Representative, participate in the Project Steering Committee;
- Participate in the project personnel selection committees to interview and give advice on candidate selection for key positions to be financed by GEF resources. The committees composition will be designated by the Project Management Committee;
- Prepare draft terms of reference for the mid-term and final evaluations in consultation with the FAO Evaluation Office, the LTO, the LTU and the FAO-GEF Coordination Unit, and project executing partners; support the organization of the evaluations; contribute to the development of an eventual agreed adjustment plan in project execution approach and supervise its implementation.

The **FAO Lead Technical Unit (LTU)** will be the Fishery and Aquaculture Department (FI). A **Lead Technical Officer (LTO)** for the project, with experience in Integrated Coastal Management and Marine and Coastal biodiversity Conservation, has been designated in the Regional Office for Latin America and the Caribbean (RLC). The LTU will, via the LTO, provide guidance and technical support to the project and support the Project Task Manager in responding to requests from the PMC for guidance on specific technical issues during the execution of the project. The LTO, supported by the LTU when needed, will be responsible for:

- Review and ensure clearance by the relevant FAO technical officers of TORs for consultancies and contracts to be performed under the project, and to CVs and technical proposals short-listed by the PMC for key project positions, goods, minor works, and services to be financed by GEF resources;
- Supported by the Project Task Manager, review and clear final technical products delivered by co-executing agencies and consultants and contract holders financed by GEF resources before the final payment can be authorized;
- Assist with review and provision of technical comments to draft technical products/reports on request from the CI-Ecuador/PM during project execution;
- Review and approve project progress reports submitted by CI-Ecuador to FAO Ecuador, in coordination with the Project Task Manager;
- Support the FAO Representative in reviewing and revising the Annual Work Plan Budget submitted by the Project Manager, for approval by the PMC.
- Prepare the annual Project Implementation Review report, supported by the Project Task Manager with inputs from the Project Manager, which will be presented to the FAO-GEF Coordination Unit for approval, finalization and submittal to the GEF Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The LTO, supported by the Project Task Manager, must

ensure that CI Ecuador and the Project Manager have provided information on co-financing provided during the course of the year for inclusion in the annual Project Implementation Review report.

- Field annual (or as needed) supervision missions;
- Review the TORs for the mid-term evaluation, participate in the evaluation mission including the mid-term workshop with all key project stakeholders, development of an eventual agreed adjustment plan in project execution approach, and supervise its implementation supported by the PTM (FAOEC).
- Review the TORs for the final evaluation; participate in the mission including the final workshop with all key project stakeholders, development and follow-up to recommendations on how to insure sustainability of project outputs and results after the end of the project.

The **FAO-GEF Coordination Unit** will review and approve PPR, project reviews, and financial reports and budget revisions based on the Annual Work Plan Budget. The GEF Coordination Unit will review and clear the annual PIR and undertake supervision missions if considered necessary. The PIR will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the GEF Coordination Unit. The GEF Coordination Unit will also participate in the mid-term and final evaluations and the development of corrective actions in the project implementation strategy in the case needed to mitigate eventual risks affecting the timely and effective implementation of the project. The FAO GEF Coordination Unit will, in collaboration with the FAO Finance Division, request transfer of project funds from the GEF Trustee based on six-monthly projections of funds needed. The GEF Coordination Unit will support the FAO Representation in Ecuador in all aspects of the supervising the NEX implementation modality that this project is following.

The **FAO Finance Division** will provide annual Financial Reports to the GEF Trustee and, in collaboration with the FAO-GEF Coordination Unit, request project funds on a six-monthly basis to the GEF Trustee.

4.3 FINANCIAL PLANNING AND MANAGEMENT

4.3.1 Financial plan (by component, outputs and co-financier)

The total cost of the project is **USD 23 665 942**, of which **USD 4 258 788** will be financed by the GEF grant and **USD 19 407 147** will be cofinancing. Table 4.1 includes the cost by component, output and co-financier and Table 4.2 includes the sources and types of confirmed co-financing. FAO will, as the GEF Agency, **only be responsible** for the execution of the GEF resources and FAO co-financing.

Table 4.1 the cost by component, output and co-financier

Component/output	MAE	INP	CI	FAN	NAZCA	MAGAP	GUAYAS concessions	ESMERALDAS concessions	HIVOS	GADP GUAYAS	WILDAID	CEDEA L	UNHCR	FAO	GIZ	Total Co-financing	% Co-financing	GEF	% GEF	Total
Component 1: Integrated management of coastal areas of high value for biodiversity																				
1.11	200,000		50,000							100,000	150,000					500,000	48%	443,653	52%	943,653
1.12	50,000		50,000													100,000	49%	157,219	51%	257,219
1.13	1,500,000															1,500,000	93%	127,263	7%	1,627,263
1.14	112,873		50,000													162,873	74%	80,719	26%	243,592
1.2.1	2,850,000		554,702	304,265		1,000,000	1,741,436	846,660	420,000	100,000			77,000	75,540	250,000	8,219,603	90%	1,314,587	10%	9,534,190
1.2.2	49,900		50,000													99,900	36%	431,634	64%	531,534
1.2.3	3,220,462		50,000													3,270,462	97%	85,419	3%	3,355,881
TOTAL	7,983,235	0	804,702	304,265	0	1,000,000	1,741,436	846,660	420,000	200,000	150,000	0	77,000	75,540	250,000	13,852,838	84%	2,640,495	16%	16,493,333
Component 2: Conservation of biodiversity in fisheries management																				
2.11		52,757	276,180		100,000	250,000	152,000	16,260	80,000		75,000			35,000		1,037,197	75%	350,293	25%	1,387,490
2.12	100,000	52,757	40,000			250,000								35,000		477,757	55%	192,176	45%	669,933
2.13	36,200	52,757	80,000	250,000						100,000				35,000		553,957	74%	134,147	26%	688,104
2.14		52,757	81,171	248,531		400,000								35,000		817,459	66%	95,554	34%	913,014
P 2.15		52,757				100,000								35,000		187,757	66%	258,836	34%	446,593
TOTAL	136,200	263,787	477,351	498,531	100,000	1,000,000	152,000	16,260	80,000	100,000	75,000	0	0	175,000	0	3,074,129	75%	1,031,006	25%	4,105,135
Component 3: Strengthening of the regulatory framework for marine and coastal biodiversity conservation and management.																				
3.11	2,156		112,279						50,900		25,000	50,000			200,000	440,335	89%	71,132	11%	511,467
3.12	2,156		112,280									50,000				164,436	89%	25,440	11%	189,876
3.13	2,156		112,280									50,000				164,436	89%	25,440	11%	189,876
3.14	2,156		112,279											50,000		164,435	89%	20,440	11%	184,875
TOTAL	8,624	0	449,118	0	0	0	0	0	50,900	0	25,000	150,000	0	0	250,000	933,642	87%	142,452	13%	1,076,094
Component 4: Monitoring and evaluation and information dissemination																				
4.11	100,000		50,000													150,000	0%	124,090	100%	274,090
4.12	10,000															10,000	20%	40,000	80%	50,000
4.13	7,000		50,000													57,000	14%	63,852	86%	120,852
4.14	50,000		50,000													100,000	0%	15,000	100%	115,000
TOTAL	167,000	0	150,000	0	0	0	0	0	0	0	0	0	0	0	0	317,000	57%	242,942	43%	559,942
PM	1,229,538															1,229,538	0.85896	201,893	14%	1,431,431
TOTAL	9,524,597	263,787	1,881,171	802,796	100,000	2,000,000	1,893,436	862,920	550,900	300,000	250,000	150,000	77,000	250,540	500,000	19,407,147	82%	4,258,788	18%	23,665,935

Table 4.2. Confirmed sources of co-financing

Sources of Co-financing	Name of Co-financer (source)	Type of Co-financing	Co-financing Amount (\$)
Government	MAE	Cash	4,914,854
		In-kind	4,609,744
Government	MAGAP	Cash	500,000
		In-kind	1,500,000
Government	INP	In- Kind	263,787
GEF Agency	FAO	Cash	75,540
		In-kind	175,000
NGO	CI	Cash	1,881,170
		In-kind	-
NGO	HIVOS	Cash	478,900
		In-kind	72,000
NGO	WildAid	Cash	125,000
		In-kind	125,000
International Organization	UNHCR	Cash	-
		In-kind	77,000
International Organization	GIZ	Cash	500,000
		In-kind	-
NGO	FAN	Cash	610,000
		In-kind	192,796
NGO	NAZCA	Cash	-
		In-kind	100,000
NGO	CEDEAL	Cash	115,000
		In-kind	35,000
Local Government	GADP GUAYAS	Cash	300,000
Communities	“6 de Julio” Crab harvesters Association	Cash	120,000
		In-kind	60,000
Communities	Balao Crab harvesters and fishermen Association	Cash	84,000
		In-kind	40,000
Communities	“25 de Julio” Crab harvesters and fishermen Association	Cash	58,800
		In-kind	165,340
Communities	“21 de Mayo” Crab harvesters and artisanal fishermen	Cash	58,800
		In-kind	165,340
Communities	Puerto Tamarindo” Crab harvesters,	Cash	54,400

	artisanal fishermen and associated activities Association	In-kind	17,600
Communities	“Mondragón” Artisanal Fishery Production Cooperative	Cash	59,200
		In-kind	135,600
Communities	Isla Escalante Alliance	Cash	30,000
		In-kind	30,000
Communities	“Puerto Buena Vista” Crab Retailers Association	Cash	87,360
		In-kind	55,600
Communities	“El Conchal” Artisanal Fishery Production Cooperative	Cash	70,200
		In-kind	270,500
Communities	“Los Ceibos” Crab Retailers Association	Cash	32,832
		In-kind	87,600
Communities	“Puerto La Cruz” Artisanal Fishery Production Cooperative	Cash	142,800
		In-kind	49,764
Communities	Northern Mangroves Artisanal fishermen and bioaquatic products collectors Association (APARPROBIMN)	Cash	-
		In-kind	164,000
Communities	“San Lorenzo” Africanecuadorian Mangrove Bioaquatic Products Artisanal Collectors Federation	Cash	-
		In-kind	242,000
Communities	Eloy Alfaro” Mangrove Bioaquatic Products Artisanal Collectors Federation	Cash	-
		In-kind	103,000
Communities	Campanita” Africanecuadorian Mangrove Bioaquatic Products Artisanal Fishermen Association	Cash	-
		In-kind	23,000
Communities	“Palma Real” Bioaquatic Products Artisanal Collectors Association	Cash	-
		In-kind	17,000
Communities	“El Viento” Bioaquatic Resources Artisanal Collectors Association	Cash	-
		In-kind	17,700
Communities	La Barca” Fishermen and Bioaquatic Products Collectors Association	Cash	-
		In-kind	9,000
Communities	11 de Octubre” Fishermen and Bioaquatic Products Collectors Association	Cash	-
		In-kind	91,200
Communities	“Tambillo” Mangrove and Bioaquatic Products Producers and Collectors Association	Cash	-
		In-kind	36,000
Communities	“Luchando por San Antonio” Bioaquatic products Artisanal Collectors Association	Cash	-
		In-kind	11,000
Communities	Canchimalero” Afroecuadorian Mangrove Artisanal Fishermen of Bioaquatic Products Association	Cash	-
		In-kind	70,000
Communities	Guachal” Afroecuadorian Artisans and Artisanal Fishermen Association	Cash	-
		In-kind	13,600

Communities	El Bajito” Afroecuadorian Artisanal Fishermen of Bioaquatic Products Association	Cash	-
		In-kind	34,560
Communities	“18 de Octubre” Mangrove Bioaquatic Products Collectors Association	Cash	-
		In-kind	17,700
Communities	“Fe y Progreso Tolita Pampa de Oro” Afro Women Association	Cash	-
		In-kind	13,500
Communities	“Artelangosta” Artisanal Fishermen of lobster from Cabo San Francisco Organization	Cash	-
		In-kind	16,260
Total Co-financing			19,407,147

4.3.2 GEF inputs

In Component 1, GEF resources will be used to prepare the basic studies to define exact sites where MPAs will be established to protect the nesting of sea turtles, and management plans for new Marine Protected Areas. Also, GEF resources will be invested in technical support for the upgrade and/or implementation of management plans (including programs for biodiversity conservation) of the 49 mangrove concessions, preparation of management plans for 21 new concessions and the expansion of three existing concessions, and capacity building and assistance to the concessionaries to access the incentive "Socio Manglar".

In component 2 GEF resources will be invested to develop fishery management models for Pacific bearded brotula, lobster and octopus in REMAGSF, crab on REMACH and dark clam on REVISMEM and REMACAM. GEF resources will also be used to prepare fisheries management models in 12 mangrove concessions. In both cases, GEF funding will be used to document the experience and prepare technological packages to replicate in other areas.

In component 3, GEF funding will be invested in the preparation of the regulatory instruments proposals and the design of the national strategy for integrated coastal management.

Altogether, GEF resources will allow the strengthening of integrated coastal management and conservation and sustainable use of marine and coastal biodiversity of continental Ecuador, by providing technical assistance through the project staff, who will be working full time in the MAE Marine and Coastal Management Undersecretariat in Guayaquil and MAE Provincial Directions in Esmeraldas and El Oro. Likewise, GEF funding will provide technical assistance to MAE in the planning, execution and review of activities, reports and products generated by the three project components and contribute to the systematization and dissemination of experiences and lessons learned, through the support of CI and HIVOS staff.

4.3.3 Government inputs

Co-financing in kind from the Government of Ecuador, mainly through MAE, INP, MAGAP and local Government of Guayas, consists of technical staff time for technical supervision and monitoring, office space and public services, transportation and travel expenses.

MAE technical staff will contribute through active participation, especially from MAE Marine and Coastal Management Undersecretariat, MAE Natural Heritage Undersecretariat, MAE Climate Change Undersecretariat, National Incentive Program "Socio Bosque", the Solid Waste National Management Program, MAE Provincial Directions in Esmeraldas, Manabí, Santa Elena, Guayas and El Oro, and the Heads of the five PANE protected areas participating in the project. MAE will also provide cash co-financing through the National

Incentive Program "Socio Bosque", by providing direct economic incentives for conservation and sustainable use of mangroves ("Socio Manglar "). Incentives may be used by Mangrove beneficiaries associations to fund organizational strengthening activities, equipment, control and monitoring, technical assistance and support biodiversity friendly productive activities (ecotourism, harvesting and marketing of biological resources).

MAGAP's inputs will cofinance productive alternatives that are sustainable and environmentally friendly in the Norther Border Zone, while INP will focus on studies of the fisheries ecosystems to determine periods of provisional bannings, quotas, etc.

4.3.4 FAO inputs

FAO will provide technical assistance, support, training and supervision of the implementation of the activities financed with GEF resources. This project will benefit from the analysis of mangrove cover by means of RAPIDEYE images in continental Ecuador, and from the dendrologic guide, which will facilitate the identification of forest and shrub species of mangrove forests in the country. This information will complement the activities of the research on the total area of mangrove and the biodiversity inventory. FAO will also provide in-kind co-financing to support capacity building in rights based management of fisheries resources and the conservation of biodiversity and ecosystem services in fisheries management

4.3.5 Other co-financiers inputs

CI-Ecuador will co-finance project execution by providing technical assistance and training from its specialists in marine conservation, environmental policies and protected areas, spatial planning and environmental communication. CI-Ecuador will also co-finance the administrative costs of the project and provide as counterpart the Executive Director, Technical Manager and Environmental Services Manager (part-time).

CI-Ecuador's co-financing comes mainly from phase 4 of the Eastern Tropical Pacific Seascape Regional Project, funded by the Walton Family Foundation. Specifically in component 1, CI-Ecuador will support studies and technical documents for the creation and management of conservation areas, and provide technical and financial assistance for the creation and management of mangrove concessions. In component 2, CI-Ecuador will contribute to the design and implementation of fisheries management systems in Galera San Francisco Marine Reserve, Churute Mangrove Ecological Reserve, El Morro Wildlife Mangrove Refuge and El Pelado Marine Reserve. Finally in component 3, CI-Ecuador will provide co-financing for communication activities and training to strengthen the regulatory framework for integrated coastal management.

HIVOS will co-finance the execution of components 1 and 2 of the project in Cayapas-Mataje Mangrove Ecological Reserve and component 3 at national level. HIVOS will co-finance with its own funds. Specifically in component 1, HIVOS will invest in the communities and mangroves beneficiaries associations organizational strengthening to support the creation and or renewal of mangrove concessions. In component 2, HIVOS will co-finance the design and implementation of the dark clam management system in Cayapas-Mataje Mangrove Ecological Reserve. Finally in component 3, HIVOS will co-finance the regulatory framework for mangrove concessions update.

GIZ inputs will be destined to provide technical assistance for institutional strengthening aiming at improving and promoting environmental governance of natural resources, fostering sustainable production, conservation of ecosystem services. UNHCR will complement alternative productive activities with refugee population that enters to mangrove concessions without permissions.

CEDEAL input will be invested in technical assistance to empower local communities in decision-making regarding biodiversity and territory management. FAN will monitor the creation of new MPAs and advice on the requirements to be eligible for FAP funding. NAZCA will provide technical assistance for the lobster and Pacific bearded brotula fisheries.

Finally, the 27 mangrove concessions from Guayas and Esmeraldas are going to continue their activities to try and properly manage their concessions, thus their input includes person/time for empirical monitoring and surveillance of the concessions, work in the fisheries, participate in the development plan, carry out monitoring activities, equipment that in some cases include small pangas, radios, fishing tools, etc.

4.3.6 Financial management of and reporting on GEF resources

Financial management and reporting in relation to the GEF resources will be carried out in accordance with FAO's rules and procedures, and in accordance with the Execution Agreement between FAO and CI-Ecuador. On the basis of the activities foreseen in the budget and the project, CI Ecuador will undertake all operations for disbursements, procurement and contracting for the total amount of GEF resources, as per the request of the NPD. CI-Ecuador shall provide project execution services in accordance with its own regulations, rules and procedures adjusted to FAO rules and regulations and GEF minimum fiduciary standards as established in the Execution Agreement to ensure that the project funds are properly administered and expended. FDHP shall maintain a project account for the funds received from FAO in accordance with accepted accounting standards

Financial Reports.

All financial reporting shall be in US dollars. Within 15 days of the end of each semester, i.e. on or before 15 July and 15 January, CI-Ecuador shall submit six-monthly statements of expenditure of GEF resources to the MAE/SGMC and the FAO Office in Ecuador (see format in Execution Agreement Annex 6.C). The purpose of the financial statement is to list the expenditures incurred on the project on a six monthly basis so as to monitor project progress and to reconcile outstanding advances during the six month period. The financial statement shall contain information that forms the basis of a periodic financial review and its timely submission will be a prerequisite to the continued disbursements of funds to CI-Ecuador.

The financial statement of expenditures on the use of the GEF resources shall show amount budgeted for the semester, amount expended since the beginning of the year, including un-liquidated obligations (commitments) as follows:

1. Details of project expenditures on an output-by-output basis, reported in line with project budget lines as set out in the project budget included in this Project Document appendix 3, as at 30 of June and 31 December each year.
2. A final statement of account in line with the project budget included in this Project Document appendix 3, reflecting actual final expenditures under the project, when all obligations have been liquidated.
3. An annual budget revision will be prepared for review and clearance by the FAO Representation in Ecuador, the LTO, and the GEF Coordination Unit. The budget revision will be posted in the FPMIS by the GEF Coordination Unit.

These financial reports are submitted by CI-Ecuador to MAE/SGMC and the FAO Representation in Ecuador and reviewed and cleared by the FAO Representative supported by the Project Task Manager, monitored by the LTO, and with previous internal clearance from the FAO GEF Coordination Unit.

Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the Financial Procedures Agreement with the GEF Trustee and submitted by the FAO Finance Division (CSFE).

Disbursement of funds

FAO shall transfer the amount of **USD 4 258 788** (four million two hundred thousand seven hundred and eighty eight) of GEF funds payable in installments, as outlined below, to CI-Ecuador to carry out the GEF financed project activities as described in this Project Document. CI-Ecuador shall prepare and submit to MAE/SGMC and the FAO, together with the Annual Work Plan, a detailed budget to facilitate the predictability of the needed funds for the year. The first installment of USD 213 000 (5 percent of the approved GEF amount) shall be advanced to CI-Ecuador within two weeks following signature of the Execution Agreement subject to submission by CI-Ecuador to FAO of all progress and completion reports on all actions agreed in the mitigation plan of fiduciary risks (as referred to in section 3.2.2).

Subsequently, CI-Ecuador shall prepare and submit to MAE/SGMC and FAO cash transfer requests (see format Execution agreement Annex 4.D) based on the updated AWP/B including the budget for the following six month together with the six-monthly statements of expenditures of GEF resources. The second and subsequent installments shall be advanced to the CI-Ecuador within two weeks upon submission of a satisfactory financial statements of expenditures report, project progress reports (see section 4.5.3 below), and an updated AWP/B including the budget for the following six month. The FAO Representative in Ecuador, supported by the FAO Project Task Manager, should certify that reporting requirements under the terms of the Execution Agreement have been met and that project progress reports for the activities completed have been submitted to and accepted by FAO as showing satisfactory management and use of GEF resources. Reports should be submitted to the LTO/LTU for review and the GEF Coordination for review and clearance of the cash transfer request. All reports should be posted on the FPMIS.

Responsibility for cost overruns.

CI Ecuador shall utilize the GEF project funds in strict compliance with the project document. CI Ecuador shall be authorized to make variations not exceeding 20 per cent on any total output budget line or any cost category line of the project budget provided that the total allocated for the specific budgeted project component is not exceeded and the reallocation of funds does not impact the achievement of any project output as per the project Results Framework (Appendix 1). Any variations exceeding 20 per cent on any total output budget line or any cost category line that may be necessary for the proper and successful implementation of the project, shall be subject to prior consultations with and approval by FAO. In such cases, a revision to the FAO-GEF budget in the Project Document should be prepared by CI-Ecuador and approved by the FAO Representative in Ecuador, the LTO and the FAO-GEF Coordination Unit. Cost overruns shall be the sole responsibility of CI Ecuador.

Audit

CI-Ecuador will ensure external audit, consistent with recognized international auditing standards, of its project accounts and records in relation to activities and expenditures related to the project. The audit reports will be provided to FAO and may be shared with the GEF Trustee if this is requested. CI-Ecuador shall submit to FAO an **annual externally audited financial statement of the GEF project account** within three months following the completion of each annual accounting period during the project.

4.4 PROCUREMENT

As per the request of the NPD, CI Ecuador will procure the equipment and services foreseen in the budget (Appendix 3) and the AWP/B, following its own rules and regulations in compliance with generally accepted international standards for public sector procurement as detailed in the Execution Agreement. FDHP will ensure that its procurement rules and procedures and their implementation ensure that the procurement process is transparent, fair and competitive.

As per the guidance in FAO's Project Cycle Guide, the CI Ecuador will draw up an annual procurement plan (Appendix 5) for major items which will be the basis of requests for procurement actions during implementation. The plan will include a description of the goods, works, or services to be procured, estimated budget and source of funding, schedule of procurement activities and proposed method of procurement. In situations where exact information is not yet available, the procurement plan should at least contain reasonable projections that will be corrected as information becomes available. The procurement plan will be reviewed during the inception workshop and will be approved by the FAO Representative in Ecuador. The PM will update the Plan every six months, request the approval of the NPD and submit the plan to the FAO Representative in Ecuador for approval.

The FAO and the PMC supervision and monitoring of contracting and procurement processes will be as follows:

- All individual consultant contracts for an amount exceeding USD 10,000 require the participation of the PMC as selection panel and prior approval of the procurement process, the terms of reference and curriculum vitae (CV);
- All contracts with private institutions or non-governmental organizations will require the prior approval of the PMC of the recruitment process, the terms of reference and technical proposals;
- There will be no single procurement of goods (non-expendable equipment) for an amount exceeding USD 20,000. All purchases of goods require prior authorization from the PMC of technical specifications and price quotation (single procurement amount not exceeding USD 20,000);
- All documents related to purchases of durable equipment and contracting services (other than consulting) related to training, workshops and events held by CI-Ecuador under the agreement with FAO, will be subject to review by FAO with the six-monthly statement of expenditures report.

4.5 MONITORING AND REPORTING

Monitoring and evaluation of progress in achieving project results and objectives will be done based on the targets and indicators established in the Project Results Framework (Appendix 1 and described in section 2.3 and 2.4). The project Monitoring and Evaluation Plan has been budgeted at USD 206,802 (see Table 4.4) in GEF resources which will be complemented by co-financing and agency fee resources. Monitoring and evaluation activities will follow FAO and GEF monitoring and evaluation policies and guidelines. The monitoring and evaluation system will also facilitate learning and replication of project results and lessons in relation to integrated management of coastal areas and mangrove fishery resources.

4.5.1 Oversight and monitoring responsibilities

The monitoring and evaluation roles and responsibilities, specifically described in the Monitoring and Evaluation Plan (see below), will be undertaken through: (i) day-to-day

monitoring and project progress supervision missions (PM and NPD); (ii) technical monitoring of biodiversity and coastal and mangrove ecosystem “status” indicators (PM in coordination with the technical team, local organizations and other project stakeholders); (iii) specific monitoring plans for the implementation of management plans for conservation areas and mangrove concessions (component 1) (Project’s technical Team supported by the National Institute of Fisheries and the mangrove beneficiaries associations involved); (iv) specific monitoring plans for the implementation of fishery resources management plans (component 2) (Project’s technical Team supported by the National Institute of Fisheries and the fishermen's organizations involved); (v) mid-term and final evaluations (independent consultants and FAO Evaluation Office); and (v) monitoring and supervision missions (FAO).

At the initiation of project implementation, the NPD and the PM will set up a project progress monitoring system. Participatory mechanisms and methodologies for systematic data collection and recording will be developed to support outcome and output indicator monitoring and evaluation. During the inception workshop (see section 4.5.3 below), M&E related tasks to be addressed will include: (i) presentation and clarification (if needed) of the Project Results Framework with all project stakeholders; (ii) review of the M&E indicators and their baseline; (iii) drafting the required clauses to include in consultants’ contracts to ensure they complete their M&E reporting functions (if relevant); and (iv) clarification of the respective M&E tasks among the Project different stakeholders. One of the main outputs of the workshop will be a detailed monitoring plan agreed to by all stakeholders based on the monitoring and evaluation plan summary presented in section 4.5.4 below.

The day-to-day monitoring of the Project implementation will be the responsibility of the NPD and the PM and will be driven by the preparation and implementation of an AWP/B followed up through six-monthly PPRs. The preparation of the AWP/B and six-monthly PPRs will represent the product of a unified planning process between main project stakeholders. As tools for results-based-management (RBM), the AWP/B will identify the actions proposed for the coming project year and provide the necessary details on output targets to be achieved, and the PPRs will report on the monitoring of the implementation of actions and the achievement of output targets. Specific inputs to the AWP/B and the PPRs will be prepared based on participatory planning and progress review with all stakeholders and coordinated through the NPD and facilitated through project planning and progress review workshops. These contributions will be consolidated by the PTC in the AWP/B draft and the PPRs.

An annual project progress review and planning meeting should be held with the participation of the PMCe to finalize the AWP/B and the PPRs. Once finalized, the AWP/B and the PPRs will be submitted to the PSC for approval (AWP/B) and review (PPR) and to FAO for approval. The AWP/B will be developed in a manner consistent with the Project Results Framework to ensure adequate fulfillment and monitoring of project outputs and outcomes.

Following the approval of the Project, the PY1 AWP/B will be adjusted (either reduced or expanded in time) to synchronize it with the annual reporting calendar. In subsequent years, the AWP/Bs will follow an annual preparation and reporting cycle as specified in section 4.5.3 below.

4.5.2 Indicators and information sources

To monitor project outputs and outcomes including contributions to global environmental benefits, specific indicators have been established in the Project Results Framework (see Appendix 1). The Project Results Framework indicators and means of verification will be applied to monitor both project performance and impact. Following FAO monitoring procedures and progress reporting formats, data collected will be sufficiently detailed to be able to track specific outputs and outcomes, and flag project risks early on. Output target

indicators will be monitored on a six-monthly basis, and outcome target indicators will be monitored on an annual basis, if possible, or as part of the mid-term and final evaluations.

The project output and outcome indicators have been designed to monitor biophysical and socio-economic impacts and progress in building and consolidating capacities for integrated coastal management, marine and coastal biodiversity conservation, and sustainable mangrove fisheries management both at the political-legal level as well as at the local level among fishermen organizations and mangrove beneficiaries associations.

On-the-ground impact indicators will be used to monitor:

Level of adoption by fishermen and gatherers of good practices for marine and coastal biodiversity conservation and management: the number of hectares covered by conservation areas, including turtle nesting beaches, fisheries rights based management model, and mangrove concessions; increased household incomes from increase in added-value products derived from marine and coastal biodiversity and other economic activities related to biodiversity and mangrove ecosystems; increased in standard of living conditions of families that incorporate best practices;. Baselines and targets for these indicators are described in the project's Results Framework and will be adjusted at the beginning of the project. Systematic monitoring will be done with the active participation of local organizations.

Increase in biodiversity including in populations of endangered species and coastal and mangrove ecosystem health: increase in threatened turtle nests and traces; increase in population of biodiversity and ecosystem health species indicators (crab, dark clam); and increase in population and spread of Hawksbill sea turtle and the American crocodile. These indicators will primarily be monitored with the involvement of mangrove concessionaires and fisher communities.

Indicators of capacity building processes will address:

Level of marine and coastal biodiversity conservation and sustainable use mainstreamed in the legal and planning instruments: the incorporation of measures for marine and coastal biodiversity conservation and sustainable use in the Autonomous Decentralized Government's public policies and development and land-use plans.

Level of created capacities to manage coastal ecosystems and resources: number of concessionaires implementing basic measures of sustainable management including measures for the conservation of biodiversity of high value; and number of concessionaires applying improved fisheries RBM plans.

The main sources of information to support the monitoring and evaluation program will be: (i) Participatory workshops and visits to conservation areas, mangrove concessions and protected areas, to collect data about the progress; (ii) Project progress reports prepared by the Project Technical Team with contributions from all project stakeholders; (iii) consultancy reports; (iv) evaluation of training workshops; (v) impact studies and midterm and final evaluations conducted by independent consultants; (vi) financial reports and budget revisions; (vii) Annual Project Implementation Review prepared by FAO's Leader Technical Officer with the support of the FAO GEF Project Task Manager and the Project Technical Team and (viii) FAO supervision mission reports.

4.5.3 Reporting schedule

Specific reports that will be prepared under the monitoring and evaluation program are: (i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) Annual Project Implementation Review (PIR); (v) Technical reports; (vi)

Co-financing reports; and (vii) Terminal Report. In addition, assessment of the GEF BD Tracking Tool (TT) against the baseline (completed during project preparation) will be required at mid-term and final project evaluations.

Project Inception Report. After FAO approval of the project and signature of the Execution agreement an inception workshop will be held. Immediately after the workshop, the PM will prepare a project inception report in consultation with the PTM in the FAO Representation in Ecuador and other project partners. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B, a detailed project monitoring plan based on the monitoring and evaluation plan summary presented in section 4.5.4 below. The draft inception report will be circulated to FAO, the PSC and the PMC for review and comments before its finalization, no later than three months after project start-up. The report will be cleared by the FAO BH, LTO, LTU and the FAO GEF Coordination Unit, and uploaded in FPMIS by the LTO.

Annual Work Plan and Budget (AWP/B). The PM, under the supervision of the NPD, will submit to the PSC a draft AWP/B no later than 10 January of each year. The AWP/B should include detailed activities to be implemented by project outputs and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The FAO PTM will circulate the draft AWP/B to the FAO interdisciplinary Project Task Force and will consolidate and submit the FAO comments to the PTC, who will incorporate the comments of all members of the PMC. The final AWP/B will be sent to the PSC for approval and to the FAO for final no-objection and upload in FPMIS by the GEF Coordination Unit. (See AWP/B format in Execution Agreement Annex 4.B).

Project Progress Reports (PPR). The PM, under the supervision of the NPD will prepare six-monthly PPRs and submit them to the PMC and the FAO Representation in Ecuador no later than 15 July (covering the period January through June) and 15 January (covering the period July through December). The first semester six months report should be accompanied by the updated AWP/B, if needed, for review and no-objection by FAO. The PPR are used to identify constraints, problems or bottlenecks that impede timely implementation and take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the project's Results Framework (Appendix 1). Each semester, the FAO PTM will review the PPR, collect and consolidate eventual comments by the FAO (BH, LTO, LTU, FAO-GEF Coordination Unit) and provide these comments to the PTC. When comments have been duly incorporated the BH and the LTO will give final approval and submit the final PPR to the FAO-GEF Coordination Unit for final clearance and upload in FPMIS. (See PPR format in Execution Agreement Annex 4.A).

Annual Project Implementation Review (PIR). The LTO supported by the FAO PTM and with inputs from the PM, will prepare an annual Project Implementation Review covering the period July (the previous year) through June (current year) to be submitted to the BH and the FAO-GEF Coordination Unit for review and approval no later than 31 July. The FAO-GEF Coordination Unit will upload the final report on FPMIS and submit it to the GEF Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The FAO-GEF Coordination Unit will provide the updated format when the first PIR is due.

Technical Reports. Technical reports will be prepared as part of project outputs and to document and share project outcomes and lessons learned. The drafts of any technical reports must be submitted by the PM to the PMC the FAO Representation in Ecuador who will share it with the LTO for review and clearance and to the FAO-GEF Coordination Unit for information and eventual comments, prior to finalization and publication. Copies of the technical reports will be distributed to the PSC and other project partners as appropriate. The final reports will be posted on the FAO FPMIS by the FAO PTM.

Co-financing Reports. The PM will be responsible for collecting the required information and reporting on in-kind and cash co-financing provided by all the project co-financiers and eventual other new partners not foreseen in the Project Document. Every year, the PTC will submit the report to the FAO Representation in Ecuador before 31 July covering the period July (the previous year) through June (current year).

GEF Tracking Tools. Following the GEF policies and procedures, the tracking tools for the BD focal areas will be submitted by FAO to the GEF Secretariat at three moments: (i) with the project document at CEO endorsement; (ii) at the project’s mid-term evaluation; and (iii) with the project’s terminal evaluation.

Terminal Report. Within two months before the end date of the project, the PM will submit to the PMC and the FAO Representation in Ecuador a draft Terminal Report. The main purpose of the final report is to give guidance to authorities (ministerial or senior government level) on the policy decisions required for the follow-up of the Project, and to provide the donor with information on how the funds were utilized. The terminal report is accordingly a concise account of the main **products, results, conclusions and recommendations** of the Project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for ensuring sustainability of project results. Work is assessed, lessons learned are summarized, and recommendations are expressed in terms of their application to the integrated coastal management in the context of the development priorities at national and provincial levels, as well as in practical execution terms. This report will specifically include the findings of the final evaluation as described in section 4.6 below. A final project review meeting should be held to discuss the draft terminal report with the PSC before it is finalized by the PTC and approved by the BH, LTO and the FAO-GEF Coordination Unit. (See instructions for Terminal Report in Execution Agreement Annex 4.F).

4.5.4 Monitoring and evaluation plan summary

Table 4.3 below provides a summary of the main monitoring and evaluation reports, responsible parties and timeframe:

Type of M&E Activity	Responsible Parties	Time-frame	Budget	Remarks
Inception Workshop	PTC/CI-Ecuador; FAO (PTM with support from LTO, BH and FAO-GEF Coordination Unit	Within two months of project start up	9,500	
Project Inception Report	PTC/CI-Ecuador; FAO PTM approved by LTO, BH and FAO-GEF Coordination Unit	Immediately after the workshop	500	

Field-based impact monitoring	Project technical team /CI-Ecuador; fishermen organizations and mangrove beneficiaries associations participating in the project	Continually	30,000	10% of project coordination time, technical workshops for identification of indicators, M&E workshops
Supervision visits and rating of progress in PPRs and PIRs	Project technical team /CI-Ecuador; FAO (PTM, LTO, FAO-GEF Coordination Unit)	Annual or as required		FAO visits will be financed through GEF agency fee.
			55,262	Project coordination visits (not including FAO) will be financed by the project travel budget
Project Progress Reports (PPR)	Project technical team /CI-Ecuador	Six-monthly	10,000	5% of project coordination time
Project Implementation Review report (PIR)	FAO (LTO y PTM) with the Project Technical Team support. PIRs cleared and submitted by the FAO GEF Coordination Unit to the GEF Secretariat	Annual	-	Financed through GEF agency fee
Technical reports	ETP/CI-Ecuador; FAO (LTO, GO)	As appropriate	17,540	
Co-financing Reports	ETP/CI-Ecuador with the otre co-financing partners' inputs	Annual	4,000	(2% of project coordination time)
Mid-term Evaluation	External Consultant, FAO Office for Evaluation in consultation with the project team including the FAO GEF Coordination Unit	At mid-point of project implementation	40,000	The project will pay for independent evaluation consultant team. The agency fee will pay for expenditures of FAO staff time and travel
Final Evaluation	External Consultant, FAO independent Evaluation Office in consultation with the project team including the FAO GEF Coordination Unit, and other partners	At the end of project implementation	40,000	The project will pay for independent evaluation consultant team. The agency fee will pay for expenditures of FAO staff time and travel
Terminal Report	Project technical team /CI-Ecuador; FAO (PTM, LTO, FAO GEF Coordination Unit and TSCR report Unit	At least two months before the end date of the GCP Agreement	0	
Total Budget			206,802	

4.6 PROVISION FOR EVALUATIONS

An independent Mid-Term Evaluation (MTE) will be undertaken at the end of the first 24 months of project implementation to review progress and effectiveness of implementation in terms of achieving project objective, outcomes and outputs. Findings and recommendations of this review will be instrumental for bringing improvement in the overall project design and execution strategy for the remaining period of the project's term if necessary. FAO (the Office of Evaluation) will arrange for the MTE in consultation with project management. The evaluation will, *inter alia*:

- Review the effectiveness, efficiency and timeliness of project implementation;
- Analyse effectiveness of partnership arrangements;
- Identify issues requiring decisions and remedial actions;
- Propose any mid-course corrections and/or adjustments to the implementation strategy as necessary; and
- Describe the technical achievements and lessons learned derived from project design, implementation and management.

An independent Final Evaluation (FE) will be carried out three months prior to the terminal review meeting. The FE will aim to identify the project impacts, sustainability of project results and the degree of achievement of long-term results. The FE will also have the purpose of indicating future actions needed to expand on the existing Project in subsequent phases, mainstream and up-scale its products and practices, and disseminate information to management authorities and institutions with responsibilities in Integrated Coastal Management, and Marine and Coastal Biodiversity Conservation and Use to assure continuity of the processes initiated by the Project.

Critical elements that both the MTR and FE will pay special attention to are the outcome indicators.

- The degree of acceptance and involvement of fishermen's organizations and mangrove beneficiaries associations in the marine and coastal biodiversity conservation and sustainable use systems;
- The level of understanding and awareness among decision makers of the values and importance of marine and coastal biodiversity and the importance of conservation and sustainable management;
- Improvement in biodiversity species indicators
- The increase in household income from the implementation of fisheries management systems in protected areas and management plans in selected mangrove concessions;
- The level of incorporation of marine and coastal biodiversity conservation and sustainable use into national policies, development plans and land use planning at provincial and municipal levels;
- The degree of participation and representation of women and vulnerable groups in the planning, training, and implementation of project activities.

4.7 COMMUNICATION AND VISIBILITY

A number of project activities will have a high visibility and will include the mechanisms to ensure that communications in support of the project's messages are effective: (i) the publication of a document with the systematization of all project activities; (ii) The publication of materials to disseminate information on the importance of marine and coastal

biodiversity target to a broad spectrum of audience; (iii) Capacity strengthening to provincial and municipal Autonomous Decentralized Governments on the importance of integrated coastal management and marine and coastal biodiversity for food security and welfare of the population; (iv) an information and awareness program for decision makers on the environmental, nutritional, cultural and economic value of marine and coastal biodiversity, which will include talks with local media and national media, and (v) proposed policies and regulations to promote integrated coastal management and of marine and coastal biodiversity conservation and sustainable use.

Furthermore, the project will ensure the mechanisms for maximum dissemination of the documents produced by the project, and particularly the Terminal Report, technical reports and the mid-term and final evaluations reports.

Using logos on project outputs

In order to properly recognize GEF and FAO for funding this project, GEF and FAO logos will appear in all publications and equipment purchased with project funds. All publications and reports generated by the project will recognize the support provided by GEF and FAO, according to GEF and FAO policy on using their picture and logos.

SECTION 5 – SUSTAINABILITY OF RESULTS

This Project was design to remove the identified barriers and to create a proper environment to safeguard the marine and coastal biodiversity of high value for conservation. It is expected that by the end of the project, governmental institutions and key stakeholders are capable of continuing the activities that this project started, thus consolidating the ICM approach and integrating it in decision making process. The project results are expected to be sustainable since national, provincial and community ownership are addressed in project activities, as well as the alignment with national priorities.

5.1 SOCIAL SUSTAINABILITY

The Project is based on a participatory process with local stakeholders and the capacity building of local communities and other groups using coastal and mangrove ecosystems and biodiversity. The involvement of local stakeholders in the creation and management of protected areas empowers people and fosters ownership. In component 1, the new MPAs will be planned with the involvement and consultation of the population living and using each project site, and integration mechanisms will be developed to: (i) include protected areas in municipal planning; and (ii) promote the participation of social groups in the management of the MPAs. Raising awareness regarding the importance of sea turtles and their nesting sites will have an impact on people's perception of biodiversity as a whole.

Strengthening management of mangrove concessions through direct cooperation of the concessionaries group will have an impact on the way concessionaries relate to mangrove ecosystems and its benefits. The design of the project recognizes the cultural differences among the groups dependent on coastal ecosystems and resources. For instance, in the concessions in the Esmeraldas province Afro-Ecuadorian children and women are the ones that collect the black shell, whereas in the Golf of Guayaquil the collectors are men. At the same time, some communities from REMACAN use sea turtles and crocodiles as bush meat. Best practices developed by concessionaires will be identified and they will be replicated, thus impacting the whole concessions population. Technical assistance will use a fisherman/woman to fisherman/women experience and good practice transfer scheme and will take into account the particularities of cultural groups. This methodology has proven to be highly accepted, since seeing a peer's success can be encouraging.

In component 2 the project will be working directly with fisherman/woman working in the five MPAs and 12 selected concessions, but other local stakeholders will be included in the process, such as the fisheries authorities and managers from other Marine Protected Areas. This will allow the dissemination of the concept of Rights-based fisheries management practices, which will contribute to develop a critical mass for replication.

In component 3, the development and update of legal instruments will be carried out through consultation processes. This will allow the mainstreaming of key stakeholders' perspectives and will contribute to the ownership of these instruments.

The Project will contribute to sustain food and income resources for the fishermen/women that benefit from mangrove resources and MPAs. It also aims at generating social and economic benefits to neighboring communities of the new MPAs.

In its whole cycle, the project will incorporate a gender approach, starting with women participation (black shell collectors and tourist operators) in all project activities. Their

empowerment as participants in decision making process, regarding their livelihood, will be encouraged. Family role is recognized in the income generation and the socio economic differences between men and women. The project also acknowledge that women shell collectors take their children to the mangrove because of cultural aspects and security impediments to leave them at home safe, whereas men crab and shell collectors from the Gulf of Guayaquil take their children with them to the mangrove to teach them the business. The Project will prioritize women empowerment through: (i) sustain shell collectors' source of income, (ii) explore mechanisms to prevent child labor without altering cultural contexts, and (iii) the active involvement of women in all participation and training events.

As part of monitoring and evaluation actions, all socioeconomic and capacity building data will be disaggregated by gender in order to monitor the differentiated impacts of the Project.

5.2 ENVIRONMENTAL SUSTAINABILITY

Project activities contribute directly to environmental sustainability, because the activities proposed are meant to have an impact in the way local population relates to mangrove and overall coastal marine areas. Removing barriers that restrict biodiversity conservation implies developing capacity to adopt ICM. Stakeholder will be better prepared to manage their coastal marine resources and in valuing them, which will enhance their sustainable management.

The creation of the four new MPAs will be based on an ICM focus to safeguard the sea turtles nesting beaches in the long term. Similarly, the work with mangrove concessionaires aims at: (i) safeguard mangrove coverage, (ii) sustain the activities of black shell and crab extraction, and (iii) to incorporate the conservation of high value biodiversity. The project will support the inclusion of protection actions for crocodile¹²⁴. At the same time the project will also support the development of fisheries Rights based management systems in MPA and mangrove concessions, which will contribute to sustain populations of species that are valuable both for local socioeconomic income and for their important role in the marine and estuary ecosystems.

Finally, improving the financial sustainability of the mangrove concessions promotes conservation, thus the project plays an important role in introducing the Socio Manglar conservation incentive mechanism.

5.3 FINANCIAL AND ECONOMIC SUSTAINABILITY

The Project will promote the articulation (i) with GADs so that they include in their budgets the investments needed to manage activities that are under their jurisdiction and that are damaging biodiversity in the waterfront (eg., stray animals control, waste management), and (ii) with the Fisheries Resources Undersecretariat to incorporate into their everyday duty the control and surveillance of mangrove zones and marine protected areas. In addition and following the section above, the project will support the Government in implementing the Socio Manglar incentive, which will provide long term finance for control and surveillance equipment, among others, in the mangrove concessions. This will complement the investment that concessionaires will make and will contribute to safeguarding mangrove ecosystems.

Finally, project activities will contribute directly and indirectly to financial and economic sustainability of the beneficiary groups. The fisheries rights based management and the mangrove concessions management best practices will contribute to sustain the fishermen,

¹²⁴ According to the In situ coastal crocodile conservation national Strategy (*Crocodylusacutus*),

shell and crab collectors' income. The development of touristic activities around the safeguard of sea turtle nests is also expected.

5.4 SUSTAINABILITY OF CAPACITIES DEVELOPED

The Project will build on the capacities and existing experiences of the institutions and mangrove user groups. The development of capacity building activities will be focused at the strengthening of the administrative and technical capacities of the (i) municipal GAD, (ii) MPA managers, (iii) fishermen groups, (iv) mangrove concessionaires, and (v) MAE Coastal and Marine Management Undersecretariat. Marine and Fisheries authorities will also be included in the development of capacities related to ICM, control and surveillance and fisheries RBM. In addition, the horizontal exchange of experiences will be promoted as well as the creation of networks of various stakeholders. The participatory focus of the project will boost the inter-institutional integration and articulation of various local stakeholders. The experience and lessons learned systematization will also contribute to the sustainability of capacities developed.

5.5 APPROPRIATENESS OF TECHNOLOGY INTRODUCED

The Project will build on (i) the Ecuadorian experience in ICM, and (ii) the empiric application of RBM and best practices that mangrove concessionaires have developed. The project will use horizontal knowledge transfer techniques (eg. fisherman to fisherman) that is a well known methodology and commonly use on agricultural and fishery extension.

5.6 REPLICABILITY AND SCALING UP

The potential for replication of the project is high given that it complements national policies and plans. The experience of integrating MPAs in the municipal integrated coastal management will be replicated in other continental MPAs in continental Ecuador. The development of fisheries management based on rights in five selected MPAs and the preparation of a regulation of fishery in MPA will allow for replicating the experience in other all MPAs in the country and elsewhere. Likewise, the development of enhanced rights based management system in twelve selected mangrove concessions will allow for replicating the experience in all concession areas.

The project's best practices and lessons learned will be replicable worldwide in coastal environments and mangrove zones. Mangrove concessions and the use of Territorial user rights for fisheries have a large applicability potential in countries where fishermen benefit from mangrove benthic fisheries resources. The most proximate application could be in the Latin American countries where shell *Anadara* is used (eg., Colombia, El Salvador, Mexico) and crabs *Ucides* (Brazil, El Salvador, Peru). Similarly, the lessons learned of applying the economic incentive *Socio Manglar* will be useful in other places that are considering the possibility of using economic incentives for the conservation of marine and coastal resources. The experience and lessons learned systematization will be useful for promoting the replication of project results in Ecuador and other countries.

FAO Representation in Ecuador will disseminate information about the results and lessons learned with other FAO projects in the country, and through the Regional Office for Latin America and the Caribbean, with the rest of the countries in the region with similar characteristics and problems.

APPENDIX 1: RESULTS MATRIX

Project outcomes and impacts:

Objective/Impact	Base line	Outcome indicators	Assumptions
<p><u>Global Environmental Objective:</u></p> <p>To develop an integrated management approach for the use and conservation of coastal and marine areas of high biodiversity value, by establishing conservation areas, strengthening mangrove concessions and integrating biodiversity conservation in fisheries management within conservation areas.</p>	<p>Alteration of the waterfront and fishing pressure are threatening the biodiversity of high conservation value. Many sea turtle (green, olive Ridley and leatherback) nesting beaches are deteriorating by the impacts arising from inadequate management of the waterfront. On Ecuadorian mainland only 22.5 km from nesting beaches are protected inside of the Machalilla National Park</p> <p>Limited capacity of local groups to efficiently manage mangrove areas, which have been given to them in custody. There are 49 mangrove concessions managed by local groups (59,000 has). There are 12,000 has mangrove under concessions, which have expired. Few concessions implement basic measures of sustainable management and no concession applies measures of protection of biodiversity of high value for conservation (e.g., coastal crocodile).</p> <p>Fisheries resources overexploited in MPAs and in mangrove concession areas with negative impact on coastal marine biodiversity. No MPA has fisheries management schemes and basic access rights based management (RBM) practices are only applied in 17,000 ha of mangroves under concessions</p>	<p>15,000 has (100 km of beach) of coastal zone are under long term protection through the creation of four new MPAs. Five municipalities include the new MPAs in integrated coastal management (ICM) schemes mitigating pressures on turtle nesting beaches.</p> <p>At least less 96,000 ha of mangrove are managed by local groups applying basic measures of sustainable management and protection of high conservation value biodiversity.</p> <p>Fisheries RBM model implemented in at least 144,000 has of MPAs demonstrating sustainable management and exploitation of fisheries resources and improved conservation of related biodiversity</p> <p>Fisheries RBM model implemented in at least 25,000 ha of mangrove concessions implemented demonstrating sustainable management and exploitation of fisheries resources and improved conservation of related biodiversity</p>	<p>Municipalities of Manta, Puerto Lopez, Santa Elena, and Guayaquil are interested in protecting the sea turtle nesting beaches and incorporate their management within a framework of ICM. Coastal communities in four new MPAs are interested and contribute to the preservation of the beaches of sea turtle nesting and high conservation value biodiversity. Groups, that have expired concessions, have minimum conditions making it possible to continue as custodians of mangroves</p> <p>Mangrove concessioners are interested in the protection of species of high conservation value. Socio Manglar generates positive incentives so mangrove concessions conserve the forest and species of high conservation value.</p> <p>The fishermen at MPAs and mangrove concessions become empowered through RBM schemes</p> <p>Effective systems are in place to control the pressure from external drivers impacting sustainable RBM schemes</p> <p>The Inter-institutional Committee of the Sea includes ICM as a priority on their agenda</p> <p>Municipalities where MPAs are created are interested in implementing ICM</p> <p>There is good collaboration between the MAE and the SRP to establish fisheries regulations based on RBM in MPAs and mangrove concession areas</p>

Objective/Impact	Base line	Outcome indicators	Assumptions
<p><u>Project Development Objective:</u></p> <p>Improve and sustain livelihood conditions for coastal communities depending on near shore fisheries, in particular fishermen and women catching red and brown shell crab for a living in the Gulf of Guayaquil and estuary of Cayapas - Mataje.</p>	<p>10,500 people capture prieta shell and crab in the Gulf of Guayaquil and estuary Cayapas - Mataje</p>	<p>At least 60% of the red and brown shell crab fishermen and women of the Gulf of Guayaquil and estuary Cayapas - Mataje are participating in RBM schemes stabilizing incomes from these fisheries.</p>	<p>Red and brown shell crab fishermen and women of the Gulf of Guayaquil and estuary Cayapas - Mataje are interested in participating in RBM shemes.</p>

Project Outputs and Outcomes:

Indicators	Baseline (2014)	Target	Milestones towards achieving Product and Results targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
Component 1. Integrated management of high-value coastal areas for biodiversity								
<p>Outcome 1.1</p> <p>Four new coastal-marine conservation areas (c.a., 15,000 ha) will be under integrated and effective management (at least 50/90 points in the management effectiveness tracking tool of GEF, METT) leading to stabilizing or increasing the detection of green turtle, olive ridley sea turtle and leatherback turtle nesting sites.</p>	<p>a) Effectiveness of managing new areas are 0</p> <p>b) 22.5 km of nesting site beaches protected along the continental coast within Machalilla National Park.</p> <p>c) Baseline for turtle nests and traces per km per day to be established in project year (PY) 1</p>	<p>a) >50/90 METT</p> <p>b) 15,000 ha protected including >122 km protected turtle nesting site beaches</p> <p>c) Traces $\text{km}^{-1} \text{day}^{-1}$ and nests $\text{km}^{-1} \text{day}^{-1} \geq \text{PY} 1$ baseline (<15% variation)</p>	<p>c) Baseline of nets and traces established for each conservation area</p>	<p>b) >7,000 ha and 77 km protected turtle nesting site beaches</p> <p>c) Traces $\text{km}^{-1} \text{day}^{-1}$ and nests $\text{km}^{-1} \text{day}^{-1}$ the same as the PY1 baseline</p>	<p>a) >30/90 METT</p> <p>b) > 15,000 ha and 122 km protected turtle nesting site beaches</p> <p>c) Traces $\text{km}^{-1} \text{day}^{-1}$ and nests $\text{km}^{-1} \text{day}^{-1} \geq$ the PY1 baseline</p>	<p>a) >50/90 METT</p> <p>c) Traces $\text{km}^{-1} \text{day}^{-1}$ and nests $\text{km}^{-1} \text{day}^{-1} \geq$ the PY1 baseline</p>	<p>Performance assessment of each MPA</p> <p>Protected area coverage map</p> <p>Information in PPR and PIR</p> <p>Midterm and final evaluations</p>	<p>CI-Ecuador</p> <p>MAE</p>
<p>Output 1.1.1</p> <p>Four new coastal-marine areas legally established and under integrated and effective management.</p>	<p>There are currently 16 MPAs in continental Ecuador</p>	<p>4 MPAs covering $\geq 15,000$ ha</p>		<p>2 MPA $\geq 7,000$ ha</p>	<p>4 MPA $\geq 15,000$ ha</p>		<p>Ministerial resolution adopting each plan</p> <p>Protected area coverage map</p> <p>Information in PPR and PIR</p>	<p>CI-Ecuador</p> <p>MAE</p>
<p>Output 1.1.2</p> <p>Biodiversity baseline established and operating monitoring system of key biodiversity indicators including turtle traces and nets in each of the</p>	<p>There is no baseline information and no monitoring system for the four conservation areas</p>	<p>4 baseline established and biodiversity monitoring systems working, one for each of the new</p>	<p>Indicators and baseline identified, and 4 monitoring systems designed</p>	<p>2 monitoring systems operating</p>	<p>4 monitoring systems operating</p>	<p>4 monitoring systems operating providing evidence on the effectiveness of the management</p>	<p>baseline Document of each area</p> <p>Design of the system of monitoring of each area</p>	<p>CI-Ecuador y</p> <p>MAE</p>

Indicators	Baseline (2014)	Target	Milestones towards achieving Product and Results targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
new MPAs		MPAs				of the new MPAs	Report of monitoring of nesting beaches Information in PPR and PIR	
Output 1.1.3 Four management plans agreed with sectoral authorities, autonomous decentralized governments (GADs) and users of coastal marine resources including zoning and land-use planning incorporating economic valuation and protection of sensitive habitats and species (e.g. beaches where marine turtles nests, intertidal ponds, rocky reefs)	Areas have been identified but no agreed management plans exist	4 plans agreed		2 draft plans	2 plans approved and under initial implementation 2 draft plans	4 plans approved and under initial implementation	Ministerial resolution adopting each plan Information in PPR and PIR	CI-Ecuador y MAE
Output 1.1.4 Priority actions of the management plans implemented with the GADs including the management of solid waste, the regulation of fishing and tourism, and the control of domestic and stray animals	In the areas where new MPAs will be established there are no management systems for the coastal front, management of solid waste, specific GAD ordinances for fisheries and tourism activities, and control of stray animals	The GADs in the four conservation areas have implemented management systems for the coastal front, management of solid waste and sewage, and control of stray animals.	Management systems designed for each area	Management systems controlling stray animals operating in at least two areas Management systems for solid waste operating in at least two areas	Management systems controlling stray animals operating in four areas Management systems for solid waste operating in four areas Management systems of the waterfront operating in at	Management systems of the waterfront operating in four areas Management systems of wastewater operating in four areas	Baseline report System design documents Information in PPR and PIR	CI-Ecuador MAE

Indicators	Baseline (2014)	Target	Milestones towards achieving Product and Results targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
					least two areas Management systems of wastewater operating in at least two areas			
<p>Outcome 1.2</p> <p>Biodiversity conservation integrated into the management of at least 96,000 ha of mangroves under concession granted to community groups, which will lead to the stabilization or increase in biodiversity and ecosystem health species indicators (crab, dark clam) and endangered species (hawksbill sea turtle - <i>Eretmochelys imbricata</i>, and the American crocodile - <i>Crocodylus acutus</i>)</p>	<p>a) 59,000 has of mangrove concessions (49 concessions granted). 12,500 ha under expired concessions expired (20 concessions)</p> <p>b) Baseline for biodiversity and ecosystem health species indicators (crab, dark clam) to be established in PY1</p> <p>c) Hawksbill sea turtle and the American crocodile baseline in mangrove concession areas to be established in PY 1</p>	<p>a) >96,000 ha of mangrove under valid concessions</p> <p>b) Population of biodiversity and ecosystem health indicators (crab, dark clam) \geq baseline in mangrove concession area (<15% variation)</p> <p>c) Population and spread of Hawksbill sea turtle and the American crocodile \geq baseline in mangrove concession area (<15% variation)</p>	<p>a) > 10,000 ha of mangrove under valid concessions</p> <p>b) Baseline and community monitoring system for biodiversity and ecosystem health species indicators (crab, dark clam) established in mangrove concession areas</p> <p>c) Hawksbill sea turtle and the American crocodile baseline and community monitoring system established in mangrove concessions areas</p>	<p>a) > 60,000 ha of mangrove under valid concessions</p> <p>b) Population of biodiversity and ecosystem health species indicators (crab, dark clam) \geq baseline in mangrove concession area</p> <p>c) Population and spread of Hawksbill sea turtle and the American crocodile \geq baseline in mangrove concession area</p>	<p>a) \geq 96,000 of mangrove under valid concessions</p> <p>b) Population of biodiversity and ecosystem health species indicators (crab, dark clam) \geq baseline in mangrove concession area</p> <p>c) Population and spread of Hawksbill sea turtle and the American crocodile \geq baseline in mangrove concession area</p>	<p>a) \geq 96,000 of mangrove under valid concessions</p> <p>b) Population of biodiversity and ecosystem health species indicators (crab, dark clam) \geq baseline in mangrove concession area</p> <p>c) Population and spread of Hawksbill sea turtle and the American crocodile \geq baseline in mangrove concession area</p>	<p>Ministerial resolution adopting each plan</p> <p>Management plan of each concession</p> <p>Information in PPR and PIR</p> <p>Midterm and final evaluations</p>	<p>CI-Ecuador</p> <p>MAE</p> <p>HIVOS (en REMACAM)</p>
<p>Output 1.2.1</p> <p>Management of 49 mangrove concessions strengthened by</p>	<p>49 concession granted but they do not incorporates measures for the protection of</p>	<p>\geq49 concessions implement basic measures of sustainable management</p>		<p>\geq20 concessions implement measures of sustainable management and conservation of</p>	<p>\geq35 concessions implement measures of sustainable management and</p>	<p>\geq49 concessions implement measures of sustainable management</p>	<p>Initial and final diagnosis of the situation of the concessions</p>	<p>CI-Ecuador</p> <p>MAE</p> <p>HIVOS (in REMACAM)</p>

Indicators	Baseline (2014)	Target	Milestones towards achieving Product and Results targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
supporting community group concessionaires in implementation of community monitoring and control plans and zoning and planning of resource use and conservation of mangrove biodiversity	biodiversity of high conservation value. Some concessions implement basic measures of sustainable management ¹²⁵ .	including measures for the conservation of biodiversity of high value		biodiversity of high value	conservation of biodiversity of high value	and conservation of biodiversity of high value	Information in PPR and PIR)
Output 1.2.2 21 new mangrove concessions (39,908 ha) granted and three existing concessions expanded (898 ha).	59.000 ha under mangrove concessions (49 concessions)	>37.000 ha under new concessions or expanded concessions	>10.000 ha under new concessions or expanded concessions	≥ 30.000 ha under new concessions or expanded concessions	≥ 37.000 ha under new concessions or expanded concessions	≥ 37.000 ha under new concessions or expanded concessions	Ministerial resolution adopting each plan Management plan of each concession Information in PPR and PIR	CI-Ecuador MAE HIVOS (ien REMACAM)
Output 1.2.3 A financial support mechanism for mangrove concessions that transfers at least USD 1 000 000 a year to community groups for investment in mangrove conservation	Communities holding concessions do not have access to a financing and incentive mechanism for conservation of mangroves and associated biota	At least 80% of the concessions are incorporated in the SOCIO MANGLAR mechanism (> 42,000 has) transferring at least USD 1 000 000 a year	At least 30% of the concessions are incorporated in SOCIO MANGLAR mechanism (≥ 28.000 ha)	At least 50% of the concessions are incorporated in SOCIO MANGLAR mechanism (≥ 46.000 ha)	At least 80% of the concessions are incorporated in SOCIO MANGLAR mechanism (≥ 76.000 ha)	At least 80% of the concessions are incorporated in SOCIO MANGLAR mechanism (≥ 76.000 ha) transferring at least USD 1 000 000 a year	Agreement between the each mangrove concession and SOCIOMANGLAR Information in PPR and PIR	CI-Ecuador y MAE

¹²⁵ “Basic sustainability measures” is understood as the minimum a concessionaire needs in order to manage an area under their care. These basic elements include: i) an organization that plans, performs and evaluates management actions; resolves conflicts among its members; and issues fines to offenders; ii) a control and monitoring plan that protects the entire concession; and iii) a collection of management measures agreed-upon by organization members so that their natural resources may be sustainably utilized (e.g., off-limit zones and individual catching quotas).

Indicators	Baseline (2014)	Target	Milestones towards achieving Output and Result targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
Component 2. Conservation of biodiversity in fishery management								
<p>Outcome 2.1</p> <p>Sustainable RBM of fisheries implemented in coastal MPAs (REMACAM, REMGSF, RMEP, REMACH and REVISMEM) and mangrove concession areas resulting in stabilization or increase in the catches of main fishing resources (i.e., red crab, dark clam, lobster, Pacific bearded brotula and octopus).</p>	<p>a) No MPA in Ecuador have implemented fisheries management plans (0 ha)</p> <p>b) 17,000 ha under mangrove concessions with basic approaches to RBM (out of 59,000 ha)</p>	<p>a) Fisheries RBM plan implemented in 5 MPAs and catches monitored (144,000 ha)</p> <p>b) fisheries RBM plan implemented in >25,000 ha under mangrove concessions and catches monitored</p>		<p>a) Fisheries RBM plan implemented in 2 MPAs (REMGSF and REMACH)</p> <p>b) fisheries RBM plan implemented in >17,000 ha under mangrove concessions</p>	<p>a) Fisheries RBM plan implemented in 3 MPAs (REMGSF, REMACH, and REVISMEM)</p> <p>b) fisheries RBM plan implemented in >21,000 ha under mangrove concessions</p>	<p>a) Fisheries RBM plan implemented in 5 MPAs (REMGSF, REMACH, REVISMEM, RMEP, and REMACAM 144,000 ha)</p> <p>b) fisheries RBM plan implemented in >25,000 ha under mangrove concessions</p>	<p>Fisheries plan for each MPA</p> <p>Fisheries plan for each concession</p> <p>Map with all concessions that applied improved fisheries management</p> <p>Information in PPR and PIR</p> <p>Midterm and final evaluations</p>	<p>CI-Ecuador y MAE</p> <p>HIVOS (en REMACAM)</p>
<p>Output 2.1.1</p> <p>A fisheries RBM plan operating within the Galera-San Francisco Marine Reserve that includes the Pacific bearded brotula, lobster and octopus</p>	<p>a) There are no bearded brotula, lobster and Octopus fisheries RBM plan</p> <p>b) Baseline for lobster, bearded brotula and octopus CPUE average to be established in PY1 for the REMGSF</p>	<p>a) Fisheries RBM plan for bearded brotula, lobster and Octopus operating</p> <p>b) CPUE average \geq baseline PY 1</p>	<p>b) Base line of CPUE average calculated for lobster, bearded brotula and Octopus</p>	<p>a) Fisheries RBM plan developed and operating for lobster, bearded brotula and Octopus including CPUE monitoring by fishery communities</p>	<p>a) Fisheries RBM plan operating for lobster, bearded brotula and Octopus including CPUE monitoring by fishery communities</p> <p>b) CPUE average \geq baseline PY 1</p>	<p>a) Fisheries RBM plan operating for lobster, bearded brotula and Octopus including CPUE monitoring by fishery communities</p> <p>b) CPUE average \geq baseline PY 1</p>	<p>Resolution (s) approving plans management of lobster, bearded brotula and Octopus</p> <p>Database of fishing monitoring</p> <p>Information in PPR and PIR</p>	<p>CI-Ecuador MAE</p>
<p>Output 2.1.2</p> <p>A fisheries RBM plan for lobster operating within the</p>	<p>a) There is no lobster RBM plan</p> <p>b) Baseline for</p>	<p>a) Fisheries RBM plan for lobster operating</p>	<p>b) Base line of CPUE average calculated for lobster</p>		<p>a) Fisheries RBM plan developed and operating for</p>	<p>a) Fisheries RBM plan operating for lobster including</p>	<p>Resolution approving fisheries management plan</p>	<p>CI-Ecuador MAE</p>

Indicators	Baseline (2014)	Target	Milestones towards achieving Output and Result targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
El Pelado Marine Reserve	lobster CPUE average to be established in PY1 for the RMEP	b) CPUE average \geq baseline PY 1			lobster including CPUE monitoring by fishery communities	CPUE monitoring by fishery communities b) CPUE average \geq baseline PY 1	Fishing monitoring database Information in PPR and PIR	
Output 2.1.3 Two fisheries RBM plans for the dark clam operating within the El Morro Mangrove Wildlife Refuge and the Cayapas Mataje Mangrove Ecological Reserve	a) There is no dark clam RBM plan b) baseline for dark clam average CPUE to be established in PY 1 for the REVISMEM and REMACAM	a) Fisheries RBM plan for dark clam operating b) CPUE average \geq baseline PY 1	b) Base line of CPUE average calculated for dark clam		a) Fisheries RBM plan developed and operating for dark clam including CPUE monitoring by fishery communities in REVISMEM	a) Fisheries RBM plan developed and operating for dark clam including CPUE monitoring by fishery communities in REVISMEM and REMACAM b) CPUE average \geq baseline PY 1	Resolution approving fisheries management plan Fishing monitoring database Information in PPR and PIR	CI-Ecuador MAE HIVOS (en REMACAM)
Output 2.1.4 A fisheries RBM plan for red crab operating within the Churute Mangrove Ecological Reserve	a) There is no red crab fishery RBM plan b) baseline for red crab average CPUE to be established in PY 1 for the REMACH	a) Fisheries RBM plan for red crab operating b) CPUE average \geq baseline PY 1	b) Base line of CPUE average calculated for red crab	a) Fisheries RBM plan developed and operating for red crab including CPUE monitoring by fishery communities in REVISMEM	a) Fisheries RBM plan operating for red crab including CPUE monitoring by fishery communities in REVISMEM and REMACAM b) CPUE average \geq baseline PY 1	a) Fisheries RBM plan operating for red crab including CPUE monitoring by fishery communities in REVISMEM and REMACAM b) CPUE average \geq baseline PY 1	Resolution approving fisheries management plan Fishing monitoring database Information in PPR and PIR	CI-Ecuador MAE
Output 2.1.5 Twelve fisheries RBM plans implemented in mangrove concessions.	a) 6 concessions apply RBM basic approaches (17.0000 ha, 1,300 people) b) baseline for red	a) 12 concessions apply improved fisheries RBM plans (>25.000 ha, 5000 people) b) CPUE average	b) Base line of CPUE average calculated for red crab and dark clam in each concession that applies basic RBM practices (3	a) 6 concessions apply improved fisheries RBM plans (> 17,000 ha, 2500 people) b) Base line of CPUE average calculated for	a) 10 concessions apply improved fisheries RBM plans (\geq 21,000 ha, 3500 people) b) CPUE average	12 concessions apply improved fisheries RBM plans (\geq 25,000 ha, 5000 people) b) CPUE average \geq	Fishing management plan for each concession Fishing monitoring database Information in PPR	CI-Ecuador MAE

Indicators	Baseline (2014)	Target	Milestones towards achieving Output and Result targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
	crab and dark clam average CPUE to be established in PY 1 for mangrove concession areas	≥ baseline PY 1	concessions)	red crab and dark clam in each concession that will apply improved fisheries RBM plans (6 concessions)	≥ baseline PY 1	baseline PY 1	and PIR	

Indicators	Baseline (2014)	Target	Milestones towards achieving Output and Result targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
Component 3. Strengthening of the regulatory framework for the conservation and management of marine and coastal biodiversity.								
Outcome 3.1 Conservation measures for the sustainable use of coastal marine biodiversity mainstreamed in regulatory framework for mangrove concessions, fisheries in MPAs, and for the municipal management of coastal zones	Current regulatory framework lacks ICM approach. GEF BD policy and regulatory framework tracking tool score: 5/18	> 12/18 in the GEF BD policy and regulatory framework tracking tool			> 8/18 in the GEF BD policy and regulatory framework tracking tool	> 8/18 in the GEF BD policy and regulatory framework tracking tool	MAE agreements CIM resolution Municipale ordinances Midterm and final evaluations	CI-Ecuador y MAE
Output 3.1.1 Proposal on updating the regulation for mangrove concessions	Regulation of concessions was last updated in 2010	Regulation of mangrove concessions updated by MAE			Proposal on updating the regulation for mangrove concessions on the basis of the experience of the project	Regulations for mangrove concessions are updated by the Ministry of Environment	Ministerial agreement that approves updated mangrove concessions regulations Reports of consultation	CI-Ecuador y MAE

Indicators	Baseline (2014)	Target	Milestones towards achieving Output and Result targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
							workshops with key stakeholders Information in PPR and PIR	
Output 3.1.2 Proposal on regulation of fisheries management in MPAs	There is no fisheries management regulation for MPAs for Ecuadorian mainland	Regulation of fisheries management in MPAs adopted by MAE			Proposal on regulation of fisheries management in MPAs for Ecuadorian mainland on the basis of the experience of the project	The regulation of fisheries management in MPAs has been adopted by the MAE	Ministerial agreement issued by the fishing regulations Reports of consultation workshops with key stakeholders Information in PPR and PIR	CI-Ecuador y MAE
Output 3.1.3 Proposal of National integrated coastal management (ICM) Strategy	There is no national ICM strategy	National ICM strategy adopted	Proposal for National ICM strategy aligned with new national regulatory framework		Final draft of ICM strategy agreed between key actors	The national ICM strategy has been adopted.	National strategy for MCI resolution issued the Reports of consultation workshops with key stakeholders Information in PPR and PIR	CI-Ecuador y MAE
Output 3.1.4 Coastal management ordinance model	Three of five municipalities where new MPAs will be established have outdated coastal management Ordinances	Five ordinances for coastal management that articulates the new MPAs		Proposal for municipal Ordinance for coastal management which incorporates the conservation of beaches	The five municipalities, where MPAs have been established, have adopted ordinances for coastal management		ICM ordinances Information in PPR and PIR	CI-Ecuador MAE

Indicators	Baseline	Target	Milestones towards achieving Output and Result targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
Component 4: M&E and information dissemination								
Outcome 4.1: Project implementation based on RBM and application of lessons learned and good practices in future interventions, facilitated		Project implementation based on RBM and demonstrating sustainability	10% progress in achievement of outcomes	50 % progress in achievement of outcomes	82% progress in achievement of outcomes	Project outcomes achieved and demonstrating sustainability	PIR PPRs Mid-term and final evaluations	CI-Ecuador MAE LTO-FAO
Output 4.1.1: Project M&E system operational, providing constant information on project progress in achieving outcomes and outputs	Project results framework with outcome and output indicators, baseline and targets	8 six-monthly project progress reports 4 PIR	2 six-monthly project progress reports 1 PIR	2 six-monthly project progress reports 1 PIR	2 six-monthly project progress reports 1 PIR	2 six-monthly project progress reports 1 PIR	PPR PIR	CI-Ecuador MAE FAO
Output 4.1.2: Midterm and final evaluations		1 mid-term evaluation and 1 final evaluation		Mid-term evaluation report		Final evaluation report	Midterm and final evaluation reports	FAO External evaluator
Output 4.1.3: Project best practices and lessons learned published		At least 3 publications on best practices and lessons learned			1 publication on best practices and lessons learned in community mangrove management under the concession scheme	2 publications on best practices and lessons learned in Fisheries RBM approaches and GAD involvement in ICM in conservation areas	Publications PPR; PIR	CI MAE FAO

Indicators	Baseline	Target	Milestones towards achieving Output and Result targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
Output 4.1.4: Webpage for information-sharing and exchange of experiences		Webpage for information sharing and exchange of experiences	Project web page in NPG web site	Web page updated	Web page updated	Web page updated	Web page	CI MAE FAO

APPENDIX 2: WORK PLAN (RESULTS BASED)

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1: Integrated management of coastal areas of high value for biodiversity																		
Output 1.1.1 Four new coastal-marine areas legally established and under integrated and effective management	Prepare the pre-feasibility studies for the four pre-established marine areas.	MAE-CI-PM					X	X										
	<i>Gather GIS information of the pre-selected marine areas</i>	MAE-CI-PM					X	X										
	<i>Technical assistance for the inter-institutional articulation and coordination of Control and Surveillance Units from the four marine protected areas in coastal control and surveillance actions.</i>	MAE-CI- PM						X	X									
	<i>Training on control and surveillance actions for the control and surveillance units related to the four marine protected areas.</i>	MAE-CI-PM					X	X			X	X						
	<i>Organization of four socialization workshops of the proposals(one for each marine protected area) and to find support from the</i>	MAE-CI-PM							X									

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>communities of the adjacent areas</i>																	
	<i>Make 4 Ministerial Agreements (one for each marine protected area) for proclaiming the 4 new marine protected areas.</i>	MAE-CI-PM										X	X	X				
Output 1.1.2 Biodiversity baseline established and operating monitoring system of key biodiversity indicators including turtle traces and nets in each of the new MPA	<i>To establish a detailed marine and coastal biodiversity baseline for each one of the 4 marine protected areas created by the support of the project</i>	CI-MAE-PM	X	X	X	X												
	<i>Delineate and apply a monitoring model of the ecological and biological impacts for the 4 marine protected areas</i>	CI-MAE-PM					X	X	X	X	X	X	X	X	X	X	X	
	<i>Social conduct assessments of the local communities in the 4 marine protected areas created by the support of the project.</i>	CI-MAE-PM	X	X														
	<i>Concretize the biological /ecological and socio-economical database and establish a baseline of the biodiversity spatial analysis</i>	CI-MAE-PM					X	X	X	X	X	X	X	X	X	X	X	
	<i>To train park rangers and people responsible for the new marine protected areas in biological, ecological and socioeconomic monitoring</i>	CI-MAE-PM							X				X				X	
Output 1.1.3 Four management plans agreed with sectoral authorities, autonomous decentralized governments (GADs) and users of coastal marine resources including zoning and land-use planning incorporating economic valuation and protection of sensitive habitats and species (e.g. beaches where	<i>Planning workshops to define the management of productive activities in each marine protected area.</i>	MAE-CI-PM																
	<i>To develop a participatory zoning scheme for the marine protected areas</i>	MAE-CI-PM						X	X			X	X					

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
marine turtles nests, intertidal ponds, rocky reefs)	<i>Technical assistance to incorporate integrated coastal management scheme in the management planning of the marine protected area</i>	MAE-CI-PM					X	X	X	X	X	X						
	<i>To develop awareness and pet and stray animal management plans with emphasis on the reduction of nesting sites predation</i>	MAE-CI-PM						X	X	X	X							
	<i>To develop awareness plans for solid waste management inside of each marine protected area</i>	MAE-CI-PM					X	X	X	X								
Output 1.1.4 Priority actions of the management plans implemented with the GADs including the management of solid waste, the regulation of fishing and tourism, and the control of domestic and stray animals	<i>Technical assistance to the institutions link in the management of the 4 marine protected areas under integrated coastal management schemes during the implementation of the action lines to address to reduce or eliminate the threats in sea turtles nesting sites.</i>	MAE-CI-PM					X	X				X	X					
	<i>To train adjacent communities to marine protected areas on solid waste and pet management.</i>	MAE-CI-PM							X				X					
	<i>Generar acciones de esterilización de animales domésticos, y erradicación de animales callejeros y ferales</i>	MAE-CI-PM						X	X			X	X					
	<i>Technical assistance for DAG regarding with the strengthening of legal framework for reducing or eliminating the threats of the sea turtles nesting sites</i>	MAE-CI-PM					X	X	X	X	X	X						
Output 1.2.1	<i>Asses the economic cost that</i>	MAE-CI-PM					X	X	X									

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Management of 49 mangrove concessions strengthened by supporting community group concessionaires in implementation of community monitoring and control plans and zoning and planning of resource use and conservation of mangrove biodiversity	<i>resources and the maintenance of mangrove concessions operating represent for the users,</i>																	
	<i>To strengthen capacities to communities with organizational weakness and help them to regain their cooperative / association status in the communities that have lost it</i>	MAE-CI-PM					X	X	X									
	<i>To support mangrove communities on regaining their expire concessions by helping them to comply with the requirements establish by MAE to issue the use agreements</i>	MAE-CI-PM					X	X	X	X								
	<i>. Technical assistance for communities to manage concessions in terms of management base on Access rights, zoning, and management processes follow-up.</i>	MAE-CI-PM							X	X	X	X	X	X				
	<i>Develop the training plans on community fisheries management, financial management, legal framework for marine and coastal resources management</i>	MAE-CI-PM										X	X	X				
	<i>Identify women social interaction linksin topics such as conservation and production, motivation and leadership and training needs</i>	MAE-CI-PM					X	X	X	X								
	<i>To write the competition rules for donating the project's equipment and supplies: engines, communication equipment, and security equipment in the</i>	MAE-CI-PM										X	X	X				

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>estuaries.</i>																	
	<i>Develop the baselines of the enhancement of marketing chains of mangrove products</i>	MAE-CI-PM							X	X	X	X	X					
	<i>To evaluate the effectiveness of the mangrove concessions management prior project disclosure</i>	MAE-CI-PM													X	X	X	
Output 1.2.2 21 new mangrove concessions (39,908 ha) granted and three existing concessions expanded (898 ha).	<i>To define the levels of conflict and vicinity with neighbourhood areas of the mangrove concessions or aquaculture facilities</i>	MAE-CI-PM					X	X	X									
	<i>To make management plans for the four new mangrove concessions and for the extension of three existing active concessions.</i>	MAE-CI-PM							X	X	X	X						
	<i>To write the internal rules for each organize group that has requested a mangrove use and custody agreement</i>	MAE-CI-PM							X	X	X	X						
	<i>To generate the geo-referenced information of the four new concessions and of the extension of the three active concessions.</i>	MAE-CI-PM							X	X	X	X						
	<i>To make the biodiversity inventory of each intervention area</i>	MAE-CI-PM							X	X	X	X						
	<i>To design in a participatory way the zoning proposal of each new concessioner area and of the areas to be extended.</i>	MAE-CI-PM							X	X	X	XX						
	<i>Estimate biodiversity's economic assessment for each new</i>	MAE-CI-PM					X	X	X									

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>concession areas and of the areas to be extended.</i>																	
	<i>To organize training workshops on control and surveillance, community fisheries management, organizational strengthening , leadership, financial management, legal framework for the marine and coastal resources management</i>	MAE-CI-PM						X	X	X	X			X	X			
	<i>Technical assistance to generate the fundamentals of concessions management in terms of: fishery monitoring, control and surveillance planning actions, organizational strengthening, organization's internal rules compliance, financial management assistance, MAE semi-annual reports submission, ecological monitoring, management based on access rights, zoning, administrative management follow-up, conflict reduction and resolution.</i>	MAE-CI-PM						X	X	X	X	X	X	X	X	X	X	X
Output 1.2.3 A financial support mechanism for mangrove concessions that transfers at least USD 1 000 000 a year to community groups for investment in mangrove conservation	<i>Technical assistance for mangrove concessions interested on applying for conservation incentives to generate the investment plan fund.</i>	MAE-CI-Hivos- PM					X	X	X	X								
	<i>Technical assistance for mangrove concessions that enter the incentives mechanism to generate compliance reports for MAE on established agreements before entering socio manglar.</i>	MAE-CI-Hivos-PM						X	X	X	X		X	X	X	X		
	<i>Technical assistance for training</i>	MAE-CI-							X	X			X	X		X	X	

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>on leadership, management, finances and cooperativism.</i>	Hivos-PM																
Component 2: Conservation of biodiversity in fishery management																		
Output 2.1.1. A fisheries RBM plan operating within the Galera-San Francisco Marine Reserve that includes the Pacific bearded brotula, lobster and octopus	<i>Stock assessment of Pacific bearded brotula, lobster and octopus</i>	MAE-CI-INP		X	X	X												
	<i>To design a data base for the fishery registry system and the upload of information of Galera fishery dynamics</i>	MAE-CI-INP			X	X	X	X										
	<i>Participative design of the fishery management plan for Pacific bearded brotula, lobster and octopus</i>	MAE-CI-INP					X	X	X	X								
	<i>Participative design of fishing zoninging inside the marine reserve for the management of Pacific bearded brotula, lobster and octopus</i>	MAE-CI-INP							X	X	X							
	<i>Design and implementation of a participative monitoring system with the marine reserve resources' users.</i>	MAE-CI-INP									X	X	X	X				
Output 2.1.2 A fisheries RBM plan for lobster operating within the El Pelado Marine Reserve	<i>Lobster stock assessment</i>	INP-MAE-CI	X	X	X										X	X	X	
	<i>Design of a data base for the operation of the fishery registry system. Design and implementation of the fishery management plan.</i>	INP-MAE-CI									X	X	X	X				
	<i>Participative design of fishery zoninging inside the marine reserve</i>	INP-MAE-CI										X	X	X				

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>for lobster management.</i>																	
Output 2.1.3 Two fishery management systems for the dark clam operating within the El Morro Mangrove Wildlife Refuge and the Cayapas Mataje Mangrove Ecological Reserve	<i>Dark clam stocks assessment in the Cayapas- Mataje Reserve.</i>	Hivos-CI-MAE	X	X	X	X												
	<i>Participative design of the fishery management plan for dark clam inside the Cayapas- Mataje reserve.</i>	Hivos-CI-MAE									X	X	X					
	<i>Implementation of fishery zoning with emphasis on the arrangements for concessions inside the Reserve.</i>	Hivos-CI-MAE										X	X	X				
	<i>Dark clam value chain analysis and market strategy</i>	Hivos-CI-MAE										X	X	X				
	<i>Training on dark clam fishery management for the reserve users.</i>	Hivos-CI-MAE										X	X	X	X			
	<i>Design and implementation of a participatory fishery monitoring system for dark clam in the reserve</i>	Hivos-CI-MAE										X	X	X	X	X	X	X
Output 2.1.4 A fishery management system for red crab operating within the Churute Mangrove Ecological Reserve	<i>Red crab assessment stock on Churute</i>	INP-MAE-CI	X	X	X	X												
	<i>Design of a database for the operation of a fishery registry system and upload the information of Churute's fishery dynamics</i>	INP-MAE-CI			X	X	X	X										
	<i>Participative design of fishery management plan for red crab Churute</i>	INP-MAE-CI						X	X	X	X							
	<i>Design and implementation of fishery zoning of Churute reserve for crab management</i>	INP-MAE-CI							X	X	X	X	X	X	X	X	X	
	<i>Training on monitoring and</i>	INP-MAE-CI							X	X	X							

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>community fishery management to park rangers and fishermen from Churute and El Morro.</i>																	
Output 2.1.5 Twelve fishery management plans implemented in mangrove concessions.	<i>Red crab and dark clam stocks assessments in six concessions from El Oro and six concessions from Guayas</i>	INP-MAE-CI	X	X	X	X												
	<i>Participative design of fishery management plan for dark clam in six concessions.</i>	INP-MAE-CI					X	X	X	X	X	X	X					
	<i>Implementation of management's plans with emphasis on fishery zoning inside El Oro and Guayas 'concessions.</i>	INP-MAE-CI					X	X	X	X	X	X	X	X	X	X	X	
	<i>Training on monitoring and community fishery management to the concessionaires of the six concessions listed.</i>	INP-MAE-CI											X	X	X	X		
Component 3: Strengthening of the regulatory framework for the conservation and management of marine and coastal biodiversity																		
Output 3.1.1 Proposal on updating the regulation for mangrove concessions	<i>Local participative workshops (at least five) to refine inputs for the local reform proposal</i>	MAE-CI-PM						X										
	<i>Prioritizing elements to be integrated or changed in the new legal framework</i>	MAE-CI-PM						X										
	<i>Socialization workshop, feedback and validation of the proposal to the National environmental authority</i>	MAE-CI-PM							X									
	<i>Report submission</i>	MAE-CI-PM									X							
Output 3.1.2	<i>Identification of key and critical</i>	MAE-CI-SRP						X										

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposal on regulation of fisheries management in MPAs	<i>aspects that obstruct the fisheries management integration to the environmental regulation for the conservation and sustainable use of natural resources and solution alternatives.</i>																	
	<i>Drafting of regulation proposal content scheme.</i>	MAE-CI-SRP						X										
	<i>Socialization, feedback and validation workshop of the proposal with the National Environmental Authority</i>	MAE-CI-SRP							X									
	<i>Regulation submission for its promulgation</i>	MAE-CI-SRP									X	X						
Output 3.1.3 Proposal of National integrated coastal management (ICM) Strategy	<i>Identification of key elements that articulate the National Strategy</i>	MAE-CI-PM						X										
	<i>Formation of the work group with institutional actors</i>	MAE- CI-PM							X									
	<i>Working meetings for identifying and developing sectorial institutional topics</i>	MAE- CI-PM						X	X									
	<i>Formulation of strategy contents proposal</i>	MAE- CI-PM								X								
	<i>Socialization, feedback and validation workshop of the strategy proposal with the National Environmental Authority</i>	MAE- CI-PM								X	X							
Output 3.1.4 Coastal management ordinance model	<i>Situational diagnosis of the state of regulation development and institutional arrangements (current ordinance) in the 7 intervention municipalities of the Project.</i>	-MAE-CI-PM					X											

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>Workshop for the definition of common aspects and key for the formulation of the ordinance model proposal</i>	MAE-CI-PM						X										
	<i>Workshop for the presentation of the first draft of the ordinance model proposal</i>	MAE-CI-PM						X										
	<i>Presentation of the ordinance model to the cantonal legislative (if it is requested by the DAG municipality)</i>	MAE-CI-PM							X	X								
Component 4: M&E and information dissemination																		
Output 4.1.1 Project M&E system operational, providing constant information on project progress in achieving outcomes and outputs	Prepare the following reports : (Project inception report), (ii) the work plans and annual Budget, (iii) Project Progress Reports, (iv) Annual review reports of project execution (v) technical reports , (vi) financing reports, and (vii) final report	FAO-CI							X								X	
Output 4.1.2 Midterm and final evaluations	Analysis of the efficiency, effectiveness and accordance with established deadlines of Project execution	FAO-CI							X								X	
	Analysis of the efficiency of the collaboration mechanisms among partners.	FAO-CI							X								X	
	Identification of aspects that require correction and proposals of intermediate and or adjustments to the execution strategy as need it.	FAO-CI				X					X							

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
	Description of the technical achievements and lessons learned derived from the design, execution and Project management.	FAO-CI														X	X		
Output 4.1.3 Project best practices and lessons learned published	<i>Drafting of the Project of best practices and lessons learned</i>	FAO-CI																	
Output 4.1.4 Webpage for information- sharing and exchange of experiences	<i>Design and elaboration of the web page</i>	FAO-CI														X	X		
	<i>Monitoring of the web page</i>	FAO-CI		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

APPENDIX 3: RESULTS BUDGET



Microsoft Office
Excel 97-2003 Worksl

Oracle Code and Description	Unit	No. Of Units	Unit Cost	BUDGET ON U.S. DOLLARS				Total		Expenditures by year			
				Comp. 1	Comp. 2	Comp. 3	Comp. 4	PM	GEF	Year 1	Year 2	Year 3	Year 4
				Total	Total	Total	Total						
5300 Salaries Professionals													
Staff hired by CI who will working at MAE													
Project Coordinators (MAE Manager 2)	month	48	4,176	51,782	66,816	41,760	40,090		200,448	50,112	50,112	50,112	50,112
Integrated Coastal Management Specialist- (MAE SP11)	month	48	3,151	151,242	-	-	-		151,242	37,811	37,811	37,811	37,811
Fisheries Resources Management Specialist- (MAE SP11)	month	48	3,151	-	151,242	-	-		151,242	37,811	37,811	37,811	37,811
Mangrove Management technician for technical assistance in El Oro- (MAE SP8)	month	48	2,252	108,072	-	-	-		108,072	27,018	27,018	27,018	27,018
CI core staff													
CI- Marine Conservation Manager	month	24	3,696	100,000	77,429	-	-		177,429	44,357	44,357	44,357	44,357
CI- Environmental Policies Manager	month	19	2,963	133,938	-	8,288	-		142,226	35,557	35,557	35,557	35,557
CI - Spatial Planning Manager	month	19	2,674	128,341	-	-	-		128,341	32,085	32,085	32,085	32,085
CI- Communications Coordinator	month	24	1,156	37,672	5,743	-	12,052		55,467	13,867	13,867	13,867	13,867
CI- Operations Manager	month	24	4,726	-	-	-	-	113,424	113,424	28,356	28,356	28,356	28,356
CI- Accounting	month	24	1,920	-	-	-	-	46,080	46,080	11,520	11,520	11,520	11,520

Oracle Code and Description	Unit	No. Of Units	Unit Cost	BUDGET ON U.S. DOLLARS				Total		Expenditures by year			
				Comp. 1	Comp. 2	Comp. 3	Comp. 4	PM	GEF	Year 1	Year 2	Year 3	Year 4
				Total	Total	Total	Total						
CI -Administrative Assistant	month	23	1,843	-	-	-	-	42,389	42,389	10,597	10,597	10,597	10,597
Sub-total Salaries Professionals				711,048	301,230	50,048	52,142	201,893	1,316,361	329,090	329,090	329,090	329,090
National Consultants													
Pre-feasibility studies for the creation of four new coastal areas under conservation schemes	month	5	35,000	35,000	-	-	-		35,000	35,000			
Four (4) management plans for conserved marine areas	month	12	80,000	80,000	-	-	-		80,000	80,000			
Biodiversity Baseline and a monitoring system of biological, oceanographic and socio-economic indicators in each of the four conservation areas	month	12	80,000	80,000	-	-	-		80,000	40,000	40,000		
Implementation of priority actions identified in the management plans of the four new conservation areas, with emphasis on solid waste management systems, sewage, pets and stray animals	month	15	58,500	58,500	-	-	-		58,500		58,500		
Strengthening of 20 mangrove concessions management located in: 18 concessions in Guayas, 1 in Manabi and 1 in Santa Elena, with emphasis on strengthening the management focus on zoning and access rights. Technical assistance to 20 concessions to enter the State's Incentive Program (socio Manglar).	month	24	128,500	128,500	-	-	-		128,500	40,000	50,000	38,500	
Strengthening the mangrove management of 20 concessions in El Oro province: 10 concessions require support to implement management plans and 10 concessions require support for the renewal mangrove use agreements with MAE. Technical assistance to 20 concessions to enter the incentive payment system (Socio Manglar)	month	24	118,500	118,500	-	-	-		118,500	40,000	50,000	28,500	
Preparation of technical files for the declaration of 21 new mangrove concessions and three extensions of concessions which would reach at least 53,000 ha of mangroves to ancestral users management	month	27	273,000	273,000	-	-	-		273,000		273,000		
Two (2) fisheries management system in Churute Mangroves Ecological Reserve and in El Morro Mangrove Wildlife Refuge	month	12	43,000	-	43,000	-	-		43,000		43,000		

Oracle Code and Description	Unit	No. Of Units	Unit Cost	BUDGET ON U.S. DOLLARS				Total		Expenditures by year			
				Comp. 1	Comp. 2	Comp. 3	Comp. 4	PM	GEF	Year 1	Year 2	Year 3	Year 4
				Total	Total	Total	Total						
A Fishery management system in the Galera San Francisco Marine Reserve (Esmeraldas Province)	month	9	87,828	-	87,828	-	-		87,828		50,000	37,828	
One (1) fishery management system in Churute Mangroves Ecological Reserve	month	12	43,000	-	43,000	-	-		43,000		13,500	29,500	
Twelve (12) fisheries management plans developed for mangrove concessions areas in Guayas and El Oro province and implementd by community groups.	month	12	69,500	-	69,500	-	-		69,500		40,000	29,500	
An environmental Law Study for updating national regulations to: (i) updating the mangrove concessions rules for traditional users, (ii) regulation of fishing in marine protected areas, (iii) coastal integrated management national strategy (iv) coastal management ordinance model	month	6	50,000	-	-	50,000	-		50,000	30,000	20,000		
Sub-total National Consultants				773,500	243,328	50,000	-	-	1,066,828	265,000	638,000	163,828	-
5570 Sub-total Consultants				1,484,548	441,698	28,728	52,142	-	2,383,189	594,090	967,090	492,918	329,090
5650 Contrats													
Project Monitoring System in operation, to provide systematize information on the progress in achieving the expected project outcomes and outputs.	lump sum	1	7,000	3,000	-	-	4,000		7,000	7,000			
1000 Publication of project's best practices and lessons learned	lump sum	1,000	10	5,000	-	-	5,000		10,000				10,000
Design and implementation project website	lump sum	1	15,000	-	-	-	15,000		15,000	15,000			
Subcontract for the management of REMACAM protected area (HIVOS)	HIVOS budget		701,210	520,830	155,976	24,404			701,210	701,210			
Mid-Term Evaluation (FAO)	lump sum	1	40,000	-	-	-	40,000		40,000				40,000
Final Evaluation (FAO)	lump sum	1	40,000	-	-	-	40,000		40,000				40,000
Audits	lump sum	1	40,000	-	-	-	40,000		40,000	10,000	10,000	10,000	10,000
Training materials on community fisheries	lump sum												

Oracle Code and Description	Unit	No. Of Units	Unit Cost	BUDGET ON U.S. DOLLARS				Total		Expenditures by year			
				Comp. 1	Comp. 2	Comp. 3	Comp. 4	PM	GEF	Year 1	Year 2	Year 3	Year 4
				Total	Total	Total	Total						
management		1	15,000	15,000	-	-	-		15,000	15,000			
Signage for mangrove concessions	lump sum	1	42,897	42,897	-	-	-		42,897		42,823		
Informative brochures of projects to concession communities	Brochures	5,000	5	-	-	-	25,000		25,000		25,000		
Toolkits of best practices for handling pets in mangrove concessions	Toolkits	5,000	2	7,500	-	-	-		7,500			7,500	
Manual of best practices and lessons learned on solid waste management, ordering of fishing and tourism activities and pets and stray animals control	Brochure	5,000	3	15,000	-	-	-		15,000			15,000	
Mangrove concessions Video	Video	1	168,000	-	-	-	16,800		16,800				15,000
Promotional video of the 4 new Protected Marine Areas created with the project support	Video	1	20,000	20,000	-	-	-		20,000		20,000		
Manual of best healthy practices for production of crabmeat and Pacific bearded brotula filets	Brochure	5,000	10	-	50,000	-	-		50,000	35,000	15,000		
Experiences and best practices manual for biodiversity conservation in fisheries management	Brochure	5,000	5	25,000	-	-	-		25,000	25,000			
Information Signs for the four new Marine Protected Areas	Signs	23	1,200	28,000	-	-	-		28,000		28,000		
Summarized Guide for accessing the National Incentive Program Socio Manglar	Brochure	5,000	3	15,000	-	-	-		15,000	15,000			
Information handbook of the new administrative arrangements for fisheries management generated by the project	Brochure	3,000	3	9,000	-	-	-		9,000		9,000		
5650 Sub-total Contrats				706,227	205,976	24,404	185,800	-	1,122,407	823,210	149,823	32,500	115,000
5900 Travels													
Costs of food, accommodation, car rental and fuel for CI project monitoring	Travel	60	1,400	54,000	30,000	-	-		84,000	21,000	21,000	21,000	21,000
Attendance to workshops and meetings (food, lodging, car rental, fuel) CI	Travel	60	1,000	34,922	25,000	-	-		59,922	14,981	14,981	14,981	14,981
Visit to mangrove concessions CI	Travel	50											

Oracle Code and Description	Unit	No. Of Units	Unit Cost	BUDGET ON U.S. DOLLARS				Total		Expenditures by year			
				Comp. 1	Comp. 2	Comp. 3	Comp. 4	PM	GEF	Year 1	Year 2	Year 3	Year 4
				Total	Total	Total	Total						
			1,000	50,000	-	-	-		50,000	12,500	12,500	12,500	12,500
Visit to 4 marine protected areas in the provinces of Esmeraldas and Guayas	Travel	64	504	32,274	40,000	-	-		72,274	18,069	18,069	18,069	18,069
Air fares on the routes Guayaquil-Quito-Guayaquil and Guayaquil Esmeraldas Guayaquil	Travel	40	800	-	40,000	-	-		40,000	10,000	10,000	10,000	10,000
Mobilizing support for mangrove concessionaires attending to working meetings (support fisherman to fisherman) (1300 concessionaires)	Travel	16	1,750	28,000	-	-	-		28,000	7,000	7,000	7,000	7,000
Project manager travel	Travel	40	1,382	26,262	29,000	-	-		55,262	13,816	13,816	13,816	13,816
Integrated Marine Coastal Management project expert travel	Travel	20	1,200	24,000	-	-	-		24,000	6,000	6,000	6,000	6,000
Fisheries Management project expert travel	Travel	20	1,200	24,000	-	-	-		24,000	6,000	6,000	6,000	6,000
Mangrove Management advisor field trips to the Jambeli Archipelago communities (El Oro)	Travel	20	1,200	24,000	-	-	-		24,000	6,000	6,000	6,000	6,000
5900 Sub-total travels				297,458	164,000	-	-	-	461,458	115,365	115,365	115,365	115,365
5023 Training and Workshops													
Project's inception workshop	workshop (150 people)	1	10,000	10,000	-	-	-		10,000	2,500	2,500	2,500	2,500
Workshops with the Ministry of Environment authorities for reviewing the technical proposals of consultancies applicants	Workshop (20 people)	5	1,500	7,500	-	-	-		7,500	1,875	1,875	1,875	1,875
Workshops for reviewing the spiny lobster fishery management proposal	Workshop (50 people)	3	2,000	-	6,000	-	-		6,000	1,500	1,500	1,500	1,500
Workshops for Review octopus management proposal	Workshop (30 people)	3	1,500	-	4,500	-	-		4,500	1,125	1,125	1,125	1,125
Workshops for reviewing the red crab fisheries resource management proposals	Workshop (30 people for 2 days)	8	3,000	-	24,000	-	-		24,000	6,000	6,000	6,000	6,000

Oracle Code and Description	Unit	No. Of Units	Unit Cost	BUDGET ON U.S. DOLLARS				Total		Expenditures by year			
				Comp. 1	Comp. 2	Comp. 3	Comp. 4	PM	GEF	Year 1	Year 2	Year 3	Year 4
				Total	Total	Total	Total						
Workshops for reviewing the Pacific bearded brotula for fisheries resource management proposals	Workshop (30 people)	4	1,500	-	6,000	-	-		6,000	1,500	1,500	1,500	1,500
Workshops for reviewing the proposal of fishery management systems in marine protected areas: Galera, Churute, El Morro and El Peeled	Workshop (50 people)	15	2,000	-	30,000	-	-		30,000	7,500	7,500	7,500	7,500
Focal workshops for validation of proposed regulation measures for fisheries management in protected areas and mangrove concessions;	Workshop (100 people)	4	4,500	-	-	18,000	-		18,000	4,500	4,500	4,500	4,500
Focal workshops to validate regulation regumeasures for fisheries management resources for spiny lobster, octopus, black shell, red crab and Pacific bearded brotula.	Workshop (100 people)	5	4,500	-	22,500	-	-		22,500	5,625	5,625	5,625	5,625
Presentation of GEF-FAO project results and lessons learned	Event (100 people)	2	5,000	-	5,000	-	5,000		10,000	2,500	2,500	2,500	2,500
5023 Sub-total Training and Workshops				17,500	98,000	18,000	5,000	-	138,500	34,625	34,625	34,625	34,625
6000 Expendable procurement													
Office supplies for workshops	Supply for 58 workshops		27,540	20,540	7,000	-	-		27,540	6,885	6,885	6,885	6,885
6000 Sub-total Expendable procurement				20,540	7,000	-	-	-	27,540	6,885	6,885	6,885	6,885
6100 Non expendable procurement													
Computer equipment	Laptop	5	2,364	11,822	-	-	-		11,822	11,822			
Copying machine	Copying machine/ scanner	2	5,736		11,472	-	-		11,472	11,472			
Projector	Projector	3	800	2,400	-	-	-		2,400	2,400			
Equipment for fairs (tents, speakers, flat tv, furniture, signs, aprons, hats, etc.).	Fair	5	2,000	10,000	-	-	-		10,000	10,000			
Engines	Engine												

Oracle Code and Description	Unit	No. Of Units	Unit Cost	BUDGET ON U.S. DOLLARS				Total		Expenditures by year				
				Comp. 1	Comp. 2	Comp. 3	Comp. 4	PM	GEF	Year 1	Year 2	Year 3	Year 4	
				Total	Total	Total	Total							
		10	7,000	70,000	-	-	-		70,000	70,000				
Splits for setting up crab flesh production systems	Split	10	2,000	20,000	-	-	-		20,000	20,000				
6100 Sub-total Non expendable procurement				114,222	11,472	-	-	-	125,694	125,694	-	-	-	-
6300 General Operating Expenditures														
6300 Sub-total General Operating Expenditures				-	-	-	-	-	-	-	-	-	-	-
TOTAL				2,640,495	1,031,006	142,452	242,942	201,893	4,258,788	1,699,869	1,273,788	682,293	600,965	

APPENDIX 4: RISK MATRIX

Risk Description	Category ¹²⁶	Impact ¹²⁷	Likelihood ¹²⁸	Mitigating actions	Owner	Status ¹²⁹

¹²⁶ Risk categories defined in the FAO ERM Strategy: CLEAR INTENDED PURPOSE (IMPACT & OUTCOME); EFFECTIVE DELIVERY STRATEGY; EXTERNAL STAKEHOLDER SUPPORT; INTERNAL STAKEHOLDER SUPPORT; RIGHT RESOURCES; VIABLE DELIVERY STRUCTURES; STRONG DELIVERY MANAGEMENT.

¹²⁷ H: High, M: Medium, L: Low

¹²⁸ H: High, M: Medium, L: Low

¹²⁹ To be updated during implementation and monitoring phase (no change, reduced, increased).

APPENDIX 5: PROCUREMENT PLAN

Ref. No.	Requirement (Item Description)	Unit (Lts, MT, Kg., etc.)	Estimated quantities	Estimated cost	Unit price ¹³⁰	Solicitation Method ¹³¹	Procurement Method ¹³²	Buyer ¹³³	Targeted tender launch date	Targeted contract award date	Targeted Delivery date	Final destination and delivery terms	Status ¹³⁴	Other Constraints/ Considerations

¹³⁰ To be completed during project cycle implementation and monitoring phase.

¹³¹ RFP: Request for Proposal; RFQ: Request for Quotation; ITB: Invitation to Bid.

¹³² Direct Procurement, re-use of tender results, UN, Framework, etc.

¹³³ CSAP, Non-HQ Location, Procurement Mission.

¹³⁴ Planned, Requested, Tendered, Order Placed, Delivered, Completed.

APPENDIX 6: TERMS OF REFERENCE (TORS)

1: Draft Terms of Reference: Project Manager (PM)

The Project Manager will be responsible for directing and overseeing the daily management of the project and work under the direct supervision of the National Project Director (NPD) and the Project Management Committee (PMC). The PM is responsible for the overall planning and coordination of all project activities and will be supported by the team of experts assigned to this project. S/he will also directly oversee the execution of all components but will be directly responsible of component. PM tasks are:

- Preparation and monitoring of annual work plans and procurement plans;
- Monitor the disbursements and financial execution;
- Supervise procurement procedures (goods and services);
- Supervise the co financing contributions mobilization;
- Management a financial reporting system to track project accounting and disbursements;
- Design and manage an information system to monitor project's execution and results;
- Supervise the consultancy for updating the macro invertebrates and the Pacific bearded brotula fishing national regulations, planning the mangrove management and use and the integrated coastal management (component 3 of the project);
- Prepare reports and monitor project progress to be presented to the Project Board (DP) for evaluation and submitted to FAO and the provision of information related to the project required by FAO and or GEF;
- Prepare the various contractual and institutional arrangements needed to execute project activities at provincial and local level;
- Prepare and develop the project supervision missions and FAO mid-term evaluation mission;
- Facilitate the development and execution of training events;
- Ensure that appropriate approaches are followed during project execution (participatory and integrated approaches, involving multiple stakeholders, etc.)
- Convene the Project Management Committee for regular meetings to coordinate activities, share lessons learned and harmonize approaches;
- Facilitate the preparation of audit reports.

Location: Guayaquil, Ecuador.

Duration: 48 months

Languages: Spanish, with some English knowledge

2: Draft terms of reference: Integrated Coastal Management Expert

The Expert in Integrated Coastal Management will be responsible for coordinating the execution of component 1 of the project and work under the general supervision of the Project Management Committee (PMC) and the direct supervision of the Project Manager (GP). S/he will be carrying out the following tasks:

- Prepare and monitor annual work plans;
- Oversee the feasibility studies for the creation of four new coastal areas under conservation schemes;
- Oversee the development of four management plans of conserved marine areas;
- Oversee the lifting of biodiversity baseline and the design of a monitoring system of indicators of biological, oceanographic and socio-economic aspects in each of the four conservation areas;
- Oversee the design and technical support to Autonomous Decentralize Governments linked to the four new marine protected areas in the implementation of priority actions in management plans, with emphasis on management systems for solid waste, sewage, and domestic and feral animals;
- Oversee the strengthening of the mangrove concessions management and their admission to the program of economic incentives (Socio Manglar);
- Supervise the preparation of technical files for the declaration of four new mangrove concessions and three extensions of existing concessions;
- Provide technical advice to MAE and other interested stakeholders, as needed, on issues related to integrated coastal management;
- Take the lead in the preparation and execution of training and capacity building activities related to integrated coastal management;
- Contribute to the analysis and documentation of lessons learned from project execution;
- Contribute to the progress reports, the project website and other communication products, as needed;
- Participate in the Project Management Committee and in the Project Technical Unit regular meetings;
- Communicate regularly all relevant information and products generated by the project;
- Participate in FAO's support mission, as needed.

Location: Guayaquil, Ecuador.

Duration: 48 months

Language: Spanish, with some English knowledge

3: Draft terms of reference: Fisheries Resources Management Expert

The / The Expert / a in Fisheries Resources Management will be responsible for coordinating implementation component 2 of the project and work under the general supervision of the Project Management Committee (PMC) and the direct supervision of / of Project Manager (GP). S/he will be carrying out the following tasks:

- Prepare and monitor Annual Work Plans;
- Provide technical advice to MAE and other interested stakeholders, on issues related to fisheries management, , as needed;
- Oversee the design and implementation of two fisheries management systems in Churute Mangrove Ecological Reserve and in El Morro Mangrove Wildlife Refuge;
- Oversee the design and implementation of a fishery management systems in Galera- San Francisco Marine Reserve;
- Oversee the development and implementation of six fishery management plans developed for mangrove areas under concessions in El Oro province;
- Oversee the design and implementation of the Black Shell fishery management system in Cayapas-Mataje Ecological Reserve;
- Take the lead in the preparation and implementation of the training and capacity building activities related to the fisheries resources management ;
- Contribute to the analysis and documentation of lessons learned from project execution;
- Contribute to the progress reports, the project website and other communication products, as needed;
- Participate in the Project Management Committee and in the Project Technical Unit regular meetings;
- Communicate regularly all relevant information and products generated by the project;
- Participate in FAO's support mission, as needed

Location: Guayaquil, Ecuador

Duration: 48 months

Languages: Spanish, with some English knowledge

4: Draft terms of reference: Mangrove and Protected Areas Management Advisor

The Mangrove and Protected Areas Management Advisor will provide technical assistance to MAE Provincial Directorate in Esmeraldas for the implementation of components 1 and 2 in the Cayapas-Mataje Ecological Reserve (REMACAM). It will work under the general supervision of the Project Management Committee (PMC) and the direct supervision of the Project Manager (GP). S/he will be carrying out the following tasks:

- Prepare and monitor annual work plans;
- Provide technical advice to the MAE and other interested stakeholders, on issues related to mangrove and protected areas management, as needed;
- Provide technical advice to strengthen the mangrove concessions management located in REMACAM and provide technical support in order to enter the economic incentives program (Socio Manglar);
- Provide technical advice for the design and implementation of the Black Shell fishery management system in REMACAM;
- Take the lead in the preparation and implementation of the training and capacity building activities related to the fisheries resources management ;
- Contribute to the analysis and documentation of lessons learned from project execution;
- Contribute to the progress reports, the project website and other communication products, as needed;
- Participate in the Project Management Committee and in the Project Technical Unit regular meetings;
- Communicate regularly all relevant information and products generated by the project;
- Participate in FAO's support mission, as needed

Location: Esmeraldas, Ecuador

Duration: 48 months

Languages: Spanish, with some English knowledge

5: Draft terms of reference: Mangrove Management Advisor

The Mangrove Management Advisor will provide technical assistance to MAE Provincial Directorate in El Oro for the implementation of component 1 in that province. It will work under the general supervision of the Project Management Committee (PMC) and the direct supervision of / of Project Manager (GP). S/he will be carrying out the following tasks:

- Prepare and monitor annual work plans;
- Provide technical advice to the MAE and other interested stakeholders, on issues related to mangrove management, as needed;
- Provide technical advice to strengthen the mangrove concessions management located in El Oro province and provide technical support in order to enter the economic incentives program (Socio Manglar);
- Provide technical assistance for the preparation of technical files for the declaration of four new mangrove concessions and three extensions of existing concessions;
- Provide technical assistance for the development and implementation of six fishery management plans developed for mangrove areas under concessions in El Oro province;
- Take the lead in the preparation and implementation of the training and capacity building activities related to the fisheries resources management ;
- Contribute to the analysis and documentation of lessons learned from project execution;
- Contribute to the progress reports, the project website and other communication products, as needed;
- Participate in the Project Management Committee and in the Project Technical Unit regular meetings;
- Communicate regularly all relevant information and products generated by the project;
- Participate in FAO's support mission, as needed

Location: Machala, Ecuador.

Duration: 48 months

Languages: Spanish, with some English knowledge

APPENDIX 7: MPAS AND MANGROVE CONCESSIONS IN CONTINENTAL ECUADOR

This appendix is available in Spanish only and can be obtained by contacting MaríaMercedes.Proanio@fao.org or Rikke.Olivera@fao.org

APPENDIX 8. PRINCIPALES ESPECIES MENCIONADAS EN EL TEXTO

Nombre común	Common name	Nombre científico
Cachuda blanca	Scalloped hammerhead	<i>Sphyrna lewini</i>
Cachuda roja	Smooth hammerhead	<i>Sphyrna zygaena</i>
Cangrejo rojo	Mangrove crab	<i>Ucides occidentalis</i>
Cocodrilo de la costa	American crocodile	<i>Crocodylus acutus</i>
Concha prieta	Ark cockle	<i>Anadara tuberculosa</i> <i>Anadara similis</i>
Concha spondylus	Spondylus	<i>Spondylus calcifer</i> <i>Spodylus princeps</i>
Corvina de roca	Pacific bearded brotula	<i>Brotula clarkae</i>
Dorado	Mahi mahi	<i>Coryphaena hippurus</i>
Langosta	Green spiny lobster	<i>Panulirus gracilis</i> <i>Panulirus penicillatus</i>
Nutria	Neotropical otter	<i>Lontra longicaudis</i>
Osito lavador	Crab-eating raccoon	<i>Procyon cancrivorus</i>
Pepino de mar	Sea cucumber	<i>Isostichopus fuscus</i>
Pulpo	Octopus	<i>Octopus</i> spp.
Tortuga carey	Hawksbill sea turtle	<i>Eretmochelys imbricata</i>
Tortuga golfina	Olive ridley	<i>Lepidochelys olivacea</i>
Tortuga laúd	Leatherback sea turtle	<i>Dermochelys coriacea</i>
Tortuga verde	Green turtle	<i>Chelonia mydas</i>