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Report No: PAD1514

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 32.6 MILLION
(US$45 MILLION EQUIVALENT)

TO THE

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

FOR AN

ECOSYSTEM CONSERVATION AND MANAGEMENT PROJECT

April 1, 2016

Environment & Natural Resources Global Practice
South Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective February 29, 2016)

Currency Unit	=	Sri Lankan Rupee (LKR)
LKR144.55	=	US$1
US$1.38131	=	SDR1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

CAP	Community Action Plan
CBO	Community Based Organization
DA	Designated Account
DWC	Department of Wildlife Conservation
EA	Environmental Assessment
EAMF	Environment Assessment and Management Framework
ECA	Elephant Conservation Area
EMP	Environmental Management Plans
ERR	Economic Rate of Return
FCO	Forestry Conservation Ordinance
FD	Forest Department
FFPO	Fauna and Flora Protection Ordinance
FM	Financial Management
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Green House Gas
GoSL	Government of Sri Lanka
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
HEC	Human Elephant Conflict
HECOEX	Human Elephant Co-Existence
IDA	International Development Association
IP	Indigenous People
IPDP	Indigenous Peoples Development Plan
IPPF	Indigenous Peoples Planning Framework
IUFR	Interim Unaudited Financial Report
LKR	Sri Lankan Rupee
M&E	Monitoring and Evaluation
MER	Managed Elephant Range
MoMDE	Ministry of Mahaweli Development and Environment
MoSDW	Ministry of Sustainable Development and Wildlife
NGO	Non-Government Organization
NPV	Net Present Value
OP	Operational Policy
PA	Protected Area
PDO	Project Development Objective
PMU	Project Management Unit
POM	Project Operations Manual
PSC	Project Steering Committee
RAP	Resettlement Action Plan
REDD+	Reducing Emissions from Deforestation and Forest Degradation Plus
SIA	Social Impact Assessment
SMF	Social Management Framework
TRC	Technical Review Committee
UNDB	United Nations Development Business

Regional Vice President:	Annette Dixon
Country Director:	Francoise Clottes
Senior Global Practice Director:	Paula Caballero
Practice Manager:	Kseniya Lvovsky
Task Team Leaders:	Darshani De Silva, Abdelaziz Lagnaoui

SRI LANKA
Ecosystem Conservation and Management Project

TABLE OF CONTENTS

PAD DATA SHEET

Sri Lanka

Ecosystem Conservation and Management (P156021)

PROJECT APPRAISAL DOCUMENT

SOUTH ASIA

Environment and Natural Resources

Report No.: PAD1514

Basic Information			
Project ID P156021	EA Category B - Partial Assessment		Team Leader(s) Darshani De Silva, Abdelaziz Lagnaoui
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]		
Project Implementation Start Date 01-Jul-2016	Project Implementation End Date 30-Jun-2021		
Expected Effectiveness Date 26-Jul-2016	Expected Closing Date 30-Jun-2021		
Joint IFC No			
Practice Manager/Manager Kseniya Lvovsky	Senior Global Practice Director Paula Caballero	Country Director Francoise Clottes	Regional Vice President Annette Dixon

Borrower: Democratic Socialist Republic of Sri Lanka			
Responsible Agency: Department of Wildlife Conservation, Ministry of Sustainable Development and Wildlife			
Contact:	Sumith Pilapitiya	Title:	Director General
Telephone No.:	0094112888585	Email:	dg@dwc.gov.lk
Responsible Agency: Forest Department, Ministry of Mahaweli Development and Environment			
Contact:	Anura Sathurusinghe	Title:	Conservator General of Forests
Telephone No.:	0094112866616	Email:	conservatorgeneral@yahoo.com
Responsible Agency: Ministry of Mahaweli Development and Environment			

Contact:	Udaya R. Seneviratne	Title:	Secretary
Telephone No.:	0094112877290	Email:	secretary@environmentmin.gov.lk

Responsible Agency: Ministry of Sustainable Development and Wildlife

Contact:	R M D B Meegasmulla	Title:	Secretary
Telephone No.:	0094112887905	Email:	sec.sdwildlife@gmail.com

Project Financing Data(in USD Million)

[ ]	Loan	[ ]	IDA Grant	[ ]	Guarantee
[X]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	45.00	Total Bank Financing:	45.00
Financing Gap:	0.00		

Financing Source	Amount
BORROWER/RECIPIENT	0.00
International Development Association (IDA)	45.00
Total	45.00

Expected Disbursements (in USD Million)

Fiscal Year	2016	2017	2018	2019	2020	2021	0000	0000	0000	0000
Annual	0.36	13.14	14.00	9.50	6.00	2.00	0.00	0.00	0.00	0.00
Cumulative	0.36	13.50	27.50	37.00	43.00	45.00	0.00	0.00	0.00	0.00

Institutional Data

Practice Area (Lead)

Environment & Natural Resources

Contributing Practice Areas

Cross Cutting Topics

[X] Climate Change
[ ] Fragile, Conflict & Violence
[X] Gender
[ ] Jobs
[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Agriculture, fishing, and forestry	General agriculture,	100	45	5

	fishing and forestry sector			
Total		100		

☐ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Environment and natural resources management	Biodiversity	50
Environment and natural resources management	Other environment and natural resources management	40
Environment and natural resources management	Environmental policies and institutions	10
Total		100

Proposed Development Objective(s)

The project development objective (PDO) is to improve the management of ecosystems in selected locations in Sri Lanka for conservation and community benefits.

Components

Component Name	**Cost (USD Millions)**
Component 1: Pilot Landscape Planning and Management	2.80
Component 2: Sustainable Use of Natural Resources and Human-Elephant Co-existence	17.00
Component 3: Protected Area Management and Institutional Capacity	24.20
Component 4: Project Management	1.00

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	**Rating**
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Moderate

9. Other	
OVERALL	Moderate

Compliance

Policy

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

Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04	**X**	
Forests OP/BP 4.36	**X**	
Pest Management OP 4.09	**X**	
Physical Cultural Resources OP/BP 4.11	**X**	
Indigenous Peoples OP/BP 4.10	**X**	
Involuntary Resettlement OP/BP 4.12	**X**	
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50		**X**
Projects in Disputed Areas OP/BP 7.60		**X**

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Establishment of PMU and maintenance of dedicated and suitably qualified staff		30-Jun-2016	

Description of Covenant

The Recipient shall establish, by no later than June 30, 2016, and thereafter maintain throughout the implementation of the Project, a Project Management Unit under the direction of qualified management provided with sufficient resources, and staffed with competent personnel in adequate numbers including, among others, a Project director, an environmental specialist, a social specialist, and financial management, procurement, engineering, and administrative staff, in each case with qualifications, experience and under terms of reference acceptable to the Association. The PMU shall be responsible for overall planning, management, implementation, coordination, monitoring and evaluation of the Project.

Name	**Recurrent**	**Due Date**	**Frequency**
Establishment of Technical Review		30-Sep-2016	

Committee			

Description of Covenant

The Recipient shall establish by no later than September 30, 2016, and thereafter maintain throughout the implementation of the Project a Technical Review Committee with composition and terms of reference satisfactory to the Association and provided with sufficient resources. The Technical Review Committee shall be responsible for reviewing and assessing the technical soundness of activities selected through strategic landscape plans, community action plans, and human-elephant coexistence investment activities, and related research; and provide recommendations to the Project Steering Committee.

Name	Recurrent	Due Date	Frequency
Submission of audited annual financial statements	**X**		Yearly

Description of Covenant

The Recipient shall have its Financial Statements audited in accordance with the provisions of Section 4.09 (b) of the General Conditions. Each audit of the Financial Statements shall cover the period of one fiscal year of the Recipient. The audited Financial Statements for each such period shall be furnished to the Association not later than six months after the end of such period.

Name	Recurrent	Due Date	Frequency
Submission of Interim Unaudited Financial Reports (IUFRs)	**X**		Quarterly

Description of Covenant

The Recipient shall prepare and furnish to the Association not later than forty-five (45) days after the end of each calendar quarter, interim unaudited financial reports for the Project covering the quarter, in form and substance satisfactory to the Association.

Name	Recurrent	Due Date	Frequency
Maintenance of Project Steering Committee	**X**		CONTINUOUS

Description of Covenant

The Recipient shall maintain, throughout the implementation of the Project, a Project Steering Committee with composition and terms of reference satisfactory to the Association. The Project Steering Committee shall be responsible for providing quality and implementation guidance for the Project.

Name	Recurrent	Due Date	Frequency
Carry out the project in accordance with the Project Operations Manual	**X**		CONTINUOUS

Description of Covenant

The Recipient shall carry out the Project in accordance with the Project Operational Manual which shall be in form and substance satisfactory to the Association; and not amend, revise or waive, nor allow to be amended, revised or waived, the provisions of the Project Operational Manual or any part thereof without the prior written agreement of the Association. In the event of any inconsistency between the Project Operational Manual and this Agreement, the provisions of this Agreement shall prevail.

Name	Recurrent	Due Date	Frequency
Carry out the project in accordance with	**X**		CONTINUOUS

the Safeguards Instruments			

Description of Covenant

The Recipient shall ensure that the Project is carried out in accordance with the provisions of the Safeguards Instruments.

Whenever an additional or revised Environmental Management Plan, Resettlement Action Plan, or an Indigenous People Development Plan shall be required for any proposed Project activity in accordance with the provisions of the respective Environmental Assessment and Management Framework, Social Management Framework, or the Indigenous Peoples Policy Framework, as the case may be, the Recipient shall, prior to the commencement of such activity, proceed to have such EMP, RAP, and IPDP: (a) prepared in accordance with the provisions of the EAMF, SMF, or IPPF, as applicable; (b) furnished to the Association for review and approval; and (c) thereafter adopted and disclosed as approved by the Association, in a manner acceptable to the Association. Except as the Association shall otherwise agree in writing, the Recipient shall not assign, amend, abrogate, waive, or permit to be assigned, amended, abrogated, or waived, any Safeguards Instrument, or any provision thereof.

The Recipient shall take all measures necessary to regularly collect and compile, and submit to the Association, as part of the Project Reports, information on the status of compliance with the Safeguards Instruments, providing details of: (a) the measures taken in furtherance of the Safeguards Instruments; (b) conditions, if any, which interfere or threaten to interfere with the smooth implementation of the Safeguards Instruments; and (c) remedial measures taken or required to be taken to address such conditions. In the event of a conflict between the provisions of any of the Safeguards Instruments and those of this Agreement, the provisions of this Agreement shall prevail.

Name	Recurrent	Due Date	Frequency
Submission of Mid-Term Review Report		31-Dec-2018	

Description of Covenant

The Recipient shall prepare, under terms of reference satisfactory to the Association, and furnish to the Association no later than December 31, 2018, a consolidated mid-term review report for the Project, summarizing the results of the monitoring and evaluation activities carried out from the inception of the Project, and setting out the measures recommended to ensure the efficient completion of the Project and to further the objectives thereof.

Name	Recurrent	Due Date	Frequency
Undertaking Enforcement of Laws and Regulations	**X**		CONTINUOUS

Description of Covenant

Unless the Association shall otherwise agree in writing, the Recipient shall ensure that any monitoring, control, surveillance, and enforcement activities under the Project are implemented in a manner designed to achieve the objective of the Project and enforce the Recipient's wildlife and/or environmental laws and regulations. Without limitations to the above paragraph, the Recipient shall ensure that: (a) all Eligible Expenditures financed for monitoring, control, surveillance, and enforcement activities are used exclusively by civilian authorities for the sole purpose of enforcing the Recipient's wildlife and/or environmental laws and regulations; (b) the Financing shall not be used to support the investigation, prosecution, and/or enforcing of judgments that targeted individuals; and (c) the Financing shall not be used for any military purposes, or the enforcement of any other non-related laws and regulation; and (d) the Financing shall not be used to purchase arms or ammunition or to train any personnel in the use of arms or ammunition.

Name	Recurrent	Due Date	Frequency
Submission of Annual Work Plan and budget	X		Yearly

Description of Covenant

The Recipient shall, throughout Project implementation, furnish to the Association for approval as soon as available, but in any case not later than September 30 of each year, an annual work plan and budget for the Project for each subsequent fiscal year, of such scope and detail as the Association shall have reasonably requested, except for the annual work plan and budget for the first fiscal year which shall be furnished prior to the commencement of any activities under the Project.

The Recipient shall, no later than two (2) months after furnishing each annual work plan and budget referred to in the preceding paragraph to the Association, finalize and adopt, and thereafter ensure that the Project is carried out in accordance with, such plan and budget as agreed in writing with the Association.

Name	Recurrent	Due Date	Frequency
Undertaking Project Monitoring, Reporting and Evaluation	X		Quarterly

Description of Covenant

The Recipient shall monitor and evaluate the progress of the Project and prepare Project Reports in accordance with the provisions of Section 4.08 of the General Conditions and on the basis of the indicators set forth in the Project Operational Manual. Each Project Report shall cover the period of one calendar semester, and shall be furnished to the Association not later than one month after the end of the period covered by such report.

Conditions

Source Of Fund	Name	Type

Description of Condition

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Darshani De Silva	Team Leader (ADM Responsible)	Senior Environmental Specialist	Natural resources management	GEN06
Abdelaziz Lagnaoui	Team Leader	Lead Environment Specialist	Natural resources management	GEN06
G. W. Anjali U. Perera Vitharanage	Procurement Specialist (ADM Responsible)	Procurement Specialist	Procurement	GGO06
Bernadeen Enoka Wijegunawardene	Financial Management	Sr Financial Management	Financial management	GGO24

	Specialist	Specialist		
Hiran Herat	Team Member	Consultant	Financing and institutions	GED06
Mokshana Nerandika Wijeyeratne	Team Member	E T Consultant	Environmental management	GEN06
Nadeera Rajapakse	Safeguards Specialist	Consultant	Environmental management	GENDR
Nathalie Weier Johnson	Team Member	Senior Environmental Specialist	Biodiversity conservation and management	GEN03
Niluka Nirmalie Karunaratne Sriskanthan	Team Member	Team Assistant	Team assistant	SACSL
Samanmalee Kumari Sirimanne	Team Member	Team Assistant	Team assistant	SACSL
Sebnem Sahin	Team Member	Senior Environmental Economist	Environmental economy	GEN06
Sunethra Chandrika Samarakoon	Team Member	Procurement Specialist	Procurement	GGO06
Susrutha Pradeep Goonesekera	Safeguards Specialist	Consultant	Social development	GSURR
Ulrich K. H. M. Schmitt	Team Member	Program Leader	-	SACSL
Zhiyun Jiang	Team Member	Junior Professional Associate	GHG accounting	GEN06

Extended Team

Name	Title	Office Phone	Location

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required? Consulting services to be determined

I. STRATEGIC CONTEXT

A. Country Context

1. Sri Lanka is a lower middle-income country with a total population of 20.7 million. Following 30 years of civil war that ended in 2009, Sri Lanka's economy grew at an average 6.7 percent during 2010-2014, reflecting a peace dividend and a determined policy thrust towards reconstruction and growth. The economy is also transitioning from a previously predominantly rural-based economy towards a more urbanized economy oriented around manufacturing and services. In 2014, the service sector accounted for 63 percent of Gross Domestic Product (GDP), followed by manufacturing (29 percent), and agriculture (8 percent). Per capita GDP reached US$3,811 in 2014. The government envisions promoting a globally competitive, export-led economy with an emphasis on inclusion. Sri Lanka has also made significant progress in its socio-economic and human development. Social indicators rank among the highest in South Asia and compare favorably with those in middle-income countries. Growth has translated into shared prosperity with the national poverty headcount ratio declining from 15.3 percent in 2006/07 to 6.7 percent in 2012/13. Much of the poverty reduction was driven by the reduction in rural poverty. Extreme poverty is rare and concentrated in some geographical pockets; however, a relatively large share of the population subsists on little more than the extreme poverty line. The country has comfortably surpassed most of the Millennium Development Goal targets set for 2015 and was ranked 73rd in Human Development Index in 2014.

2. The country's fiscal landscape is challenging. In 2014, a widened primary deficit and a slowdown in growth increased the fiscal deficit and the public debt to 5.7 percent and 71.8 percent respectively, as a share of GDP. This trend marks a slight reversal of the fiscal consolidation path observed in the post-conflict period. The fiscal budget for 2016 presented to the Parliament projects a deficit approximately 6.0 percent of GDP for the years 2015 and 2016. The newly elected government presented its economic policy statement to the Parliament in November 2015. This policy statement identified generating one million job opportunities, enhancing income levels, developing rural economies, and creating a wide and a strong middle class as key policy priorities. It proposed consolidation of fiscal operations by raising revenue. Further, it discussed far reaching reforms to improve performance of the State Owned Enterprises and enhance trade and Foreign Direct Investment. A multitude of new institutions were also proposed to be established to administer the development agenda. The implementation of this reform oriented policy statement will require continued political will and close coordination of all stakeholders.

3. The Government of Sri Lanka (GoSL) has recognized that the long-term sustainability of the environment and natural resources depends on their ability to provide benefits to people and the country. This includes the need to mobilize financing and revenue generation from sustainable use of the natural resources, such as through nature-based tourism, payment for ecosystem services, and others. The GoSL is already undertaking policy and institutional reforms and building capacity to address the Human Elephant Conflict (HEC), which exemplifies Sri Lanka's challenge to reconcile environmental protection and economic development. The GoSL also aims at improving the sustainable use and effective management of forests and wildlife resources, which are highlighted as national priorities in the *Punarudaya*-Accelerated National Environment Conservation Program adopted in 2015.

B. Sectoral and Institutional Context

4. Sri Lanka exhibits a wide array of ecosystems with a diversity of species considered to be the richest per unit area in the Asian region. The country is ranked as a global biodiversity hot spot. Natural forests occupy about 30 percent of the total land area. Sri Lanka has several distinct climatic zones, each with characteristic forests, wildlife and wetlands associated with 103 major rivers and over 10,000 irrigation tanks. The country has rich marine and coastal ecosystems along its 1,620 km coastline. Biodiversity has been shaped by a complex geological history, altitudinal variation, and a monsoonal climate regime determined by the spatial and seasonal distribution of rainfall. Sri Lanka has an exceptional degree of endemism, including a large number of geographic relics and many point endemics that are restricted to extremely small areas.

5. About 14 percent of Sri Lanka's land area is under legal protection. Despite conservation efforts, deforestation, forest degradation and biodiversity loss continue. About 30 percent of the Dry Zone forests is degraded, while highly fragmented small forest patches dominate in the Wet Zone. The average annual rate of deforestation has been 7,147 ha/year during 1992-2010. While logging in natural forests was banned in Sri Lanka in 1990, forest clearance for infrastructure development, human settlements, agriculture as well as encroachment, illegal timber felling, forest fires, spread of invasive species, clearing of mangrove forests for prawn farming, and destructive mining practices are contributing to deforestation and forest degradation. Sri Lanka's National Red List of 2012 and the International Union for Conservation of Nature Global Red List of 2013 assessed a significant number of fauna and flora in Sri Lanka as threatened with extinction.

6. The HEC is a noteworthy issue in the context of Sri Lanka's development. Sri Lanka has the highest density of elephants among the Asian elephant range states. Estimates of the number of elephants in Sri Lanka vary from about 3,000 to 5,000. However, protected areas (PAs) under the Department of Wildlife Conservation (DWC) are insufficient in size and quality to sustain the country's elephant population. Over two-thirds of the wild elephant population can be found outside PA system. This is because the elephant is an edge species that prefers open forest habitat to dense primary forests. PAs, on the other hand, are generally primary or mature forests and provide only sub-optimal habitat for elephants. As a result, elephants graze on other forest and agricultural lands to survive, causing conflicts with farmers, including deaths of humans and elephants, and crop and property damage. Around 70 humans and over 200 elephants are killed annually. Crop and property damage is approximately US$10 million annually. With accelerating development and fragmentation of habitats, innovative landscape management approaches are needed to address the HEC. Such approaches would balance competing objectives of creating new opportunities for rural poverty reduction and employment and sustaining Sri Lanka's unique elephant population over much of the Dry Zone.

7. Sri Lanka's biodiversity and natural resources endowments are important assets for future sustainable development. Many communities living in the vicinity of natural forests are directly and indirectly dependent on the natural ecosystems. The collection of Non-Timber Forest Products including medicinal plants and food items – yams, mushrooms, honey and wild fruits –, as well as the extraction of fuel wood and fodder for livestock from forests are important sources

of livelihood in addition to farming; while the demand for wood and wood products is now mainly met from home gardens, state-owned or privately held woodlots and plantations.

8. Nature-based tourism is a fast growing segment of the global tourism industry creating opportunities for growth and to develop a successful rural development growth strategy. Due to the ease of wildlife sighting, Sri Lanka has the potential of being the best nature-based tourism destination outside Africa. Yet nature-based tourism remains underexploited. Less than 30 percent of foreign tourists visit the country's national parks due to poor visitor experience as a result of inadequate management. Much of the sector operates as an enclave industry, generating little employment and growth benefits. Only limited portion of the monetary benefits from nature-based tourism flow to local communities. Efforts made for joint management of visitor facilities within PAs of the Forest Department (FD) have not yet been successful due to lack of quality and consistent service. The development of home stays, village trails, agriculture trails, wildlife viewing outside PAs, and others are known to have potential to succeed.

9. According to the Intergovernmental Panel on Climate Change, even under the most stringent mitigation scenarios, the world's temperature will continue to increase, making adaptation strategies a necessity, as well as addressing the challenges posed by current aggravated climate variability. In Sri Lanka, there is evidence that wet areas are becoming wetter and dry area drier contributing to a trend of heightened annual and seasonal variability. Anthropogenic activities of people are having a significant and at times escalating impact on ecosystems; hence impacting their ability to provide the critical services that are increasingly important for communities to adapt to climate change. Under most emission scenarios and without accounting for human induced impacts, studies indicate that Sri Lanka's forest carbon pool will remain unchanged.

10. The GoSL's development framework commits Sri Lanka to a path of sustainable development and identifies the country's biodiversity as part of its natural heritage and a high conservation priority. The value of the natural resources has been recognized recently and the GoSL has enacted various laws aimed at the protection of natural resources with an understanding of its importance for sustained growth and poverty reduction. Sri Lanka was the first country in Asia to prepare a *National Environmental Action Plan* in 1992. A number of natural resources management strategies were developed subsequently, including the *Biodiversity Conservation Action Plan* of 1998 (and addendum of 2006), *Protected Area Gap Analy*sis of 2006, *Haritha Lanka* of 2009, and *Drivers of Deforestation and Forest Degradation of Sri Lanka* of 2015. These strategies identify critical areas that require strategic conservation efforts. One of the first policy documents prepared by the new Government elected in 2015 was a *National Environmental Conservation Program* where conservation and management of forests and wildlife feature prominently in four of the six priority areas.

11. Five dedicated government agencies have been set up for environment and natural resources management. This includes the: FD, Central Environmental Authority, Coast Conservation Department, Geological Survey and Mines Bureau, State Timber Corporation and Marine Environment Protection Agency under the Ministry of Mahaweli Development and Environment (MoMDE), and the DWC under the Ministry of Sustainable Development and Wildlife (MoSDW). In addition, there are separate institutions managing water and some of the

land resources. Institutional mandates of many of the institutions are overlapping and coordination, investments, incentives, and information flow is weak. In addition, there is near exclusive focus on strict protection instead of a more integrated management approach. This system, combined with outdated institutional capacity, infrastructure and financing models, is no longer capable of effectively governing the sustainable use, management and enforcing legal compliance pertaining to depleting natural resources. Conditions are now converging, with strong leadership for more effective policy decisions and strategies for greater economic and more sustainable use of natural resources, particularly actions that will invigorate local communities and ensure more inclusive growth with the initiation of *Punarudaya*. Strengthened integrated management of natural resources could yield a triple dividend by providing incentives for shared prosperity and reducing poverty while enhancing the sustainability of resource use by the local communities and the country.

C. Higher Level Objectives to which the Project Contributes

12. The proposed project is consistent with the Bank Group's Country Partnership Strategy for Sri Lanka (2013-2016) (Report No. 84426-LK), which was discussed by the World Bank Board of Executive Directors on May 22, 2012. The project would support the Country Partnership Strategy's strategic themes on improved living standards and social inclusion, and improved resilience to climate and disaster risks.

13. The 2015 Systematic Country Diagnostic for Sri Lanka confirms environmental sustainability as one of the priority areas for sustaining progress in ending poverty and promoting shared prosperity. The Systematic Country Diagnostic highlights the country's environmental management challenges, calls for the better stewardship of Sri Lanka's natural assets, and emphasizes the importance of natural resources for the development of tourism in the country. This is in line with Sri Lanka's own priorities of development. The Ecosystem Conservation and Management Project is directly responding to Sri Lanka's development priorities and the World Bank's twin goals by improving natural resources management, and protecting and improving the natural resource base on which rural communities depend. The project will support inclusive development among some of the country's poorest communities living in the adjacent areas of PAs by addressing the HEC that impacts their lives and livelihoods and ensuring benefits to the communities from better managed ecosystems.

14. The project contributes to key national strategies and actions plans, including: (a) *Punarudaya* which identifies the importance of conservation of the country's natural resources, particularly forest and wildlife resources, and institutional strengthening and reform; (b) emerging strategy on Reducing Emissions from Deforestation and Forest Degradation Plus (REDD+); and (c) other sectoral strategies on water, agriculture and energy. The project will also contribute to the GoSL's policies of: increasing forest cover; harnessing of ecosystem benefits, including the protection of watersheds for agricultural productivity; developing mechanisms for human-elephant co-existence; improving the revenue generating capability of wildlife and forest resources; and developing the capacity for delivering institutional mandates of key natural resources management agencies. The project contributes to the higher level objective of long-term environmental sustainability and inclusiveness of growth and development in and around ecologically sensitive areas in Sri Lanka.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

15. The project development objective (PDO) is to improve the management of ecosystems in selected locations in Sri Lanka for conservation and community benefits.

B. Project Beneficiaries

16. The project will generate national and local environmental and community-level benefits. At the national level, the project will develop the capacity of the key implementing agencies, the DWC and FD to manage PAs more effectively and based on modern PA and landscape management approaches, improve the quality of nature based tourism, and achieve better institutional coordination at national and sub-national levels. Locally, the project will directly benefit approximately 15,000 people out of which at least 30 percent are expected to be female beneficiaries from communities located in the adjacent areas of the participating PAs. It will also benefit other sensitive natural habitats by supporting sustainable use of natural resources, the mitigation of the human-elephant conflict, and improved capacity in natural resources management, with particular focus on women and vulnerable groups. The project will also benefit local authorities through improved awareness of natural resources management.

C. PDO Level Results Indicators

17. The following are key indicators to assess the progress toward achieving the PDO:

(a) Direct project beneficiaries (number), of which female (percentage);
(b) People with improved access to income generating activities as a result of project interventions (number);
(c) Villages and agriculture plots protected as a result of human-elephant co-existence activities (number);
(d) Areas brought under enhanced biodiversity protection (hectare); and
(e) Visitor revenue of selected PAs increased as a result of project interventions (percentage).

III. PROJECT DESCRIPTION

A. Project Components

18. The project comprises four components, which are summarized below. A detailed project description is provided in Annex 2.

Component 1: Pilot Landscape Planning and Management (US$2.8 million)

19. Component 1 will provide technical assistance, training and capacity building to develop the guiding framework for landscape-level management planning and support the piloting of landscape planning and management in two selected landscapes comprising contiguous areas of unique ecological, cultural and socio-economic characteristics. Component 1 will also support

the capacity building of the newly formed Sustainable Development Secretariat under the MoSDW that will lead the component. These will include landscapes representing: (a) the biodiversity rich wet zone, and (b) the dry and arid zone forest ecosystems, with conservation significance.

20. The strategic landscape plans will focus on broad guidelines and principles for the management of PAs and other ecosystems within a landscape and involve: (a) defining opportunities and constraints for conservation action within the landscape; (b) identification of effective ecological networks; (c) identification of measures to secure the integrity of ecosystems and viable populations of species; (d) developing rapid assessment systems for landscape scale ecosystem quality including the identification of high conservation value ecosystems; (e) setting out a stakeholder negotiation framework for land and resource use decisions and for balancing the trade-offs inherent in such landscape approaches; and (f) recognizing and using overlapping cultural, social, and governance "landscapes" within biologically defined areas.

21. The component will be implemented by the Sustainable Development Secretariat of MoSDW. The component will use consultative and participatory approaches to ensure all relevant stakeholders views and opinions are considered in the development of the two landscape plans and their participation during implementation of the plans.

Component 2. Sustainable Use of Natural Resources and Human-Elephant Co-Existence (US$17.0 million)

22. Component 2 will support communities living adjacent to PAs and other ecologically sensitive areas to plan for natural resource use and to develop biodiversity compatible, productive and climate resilient livelihood activities and to scale-up successful models that address the human-elephant conflict.

23. ***Sub-component 2(a): Sustainable use of natural resources for livelihood enhancement (US$6.0 million).*** This sub-component will finance the identification and implementation of biodiversity-friendly and climate-smart existing or new livelihood options through participatory Community Action Plans (CAPs). Typical activities in the CAPs will include: (a) improvements of small-scale social infrastructure such as rehabilitation of local irrigation tanks; (b) the establishment of woodlots; (c) improving the productivity of home gardens; (d) promotion of sustainable agricultural and non-agricultural income-generation activities; (e) development of agro-forestry; and (f) development of community-based ecotourism that promotes sustainable use of natural resources. The project will also provide financing for capacity development in livelihood development, and business development and management, and will facilitate access to finance. It will also assist in the capacity development of participating community groups on natural resources management and co-management of forest and wildlife resources.

24. ***Sub-component 2(b): Human-elephant co-existence for livelihood protection (US$11.0 million)***. This sub-component has three key areas of interventions.

25. *Human-Elephant Co-Existence (HECOEX) activities.* This will finance the scaling up successful human-elephant coexistence pilot projects within high HEC areas. It will fund the

implementation of: (a) a landscape conservation strategy aimed at allowing elephants to range outside the DWC PAs providing protection to farmers and village communities through protective solar electric fencing; and (b) management of elephants in Elephant Conservation Areas (ECAs) and Managed Elephant Ranges (MERs) outside the DWC PA network without transfer or change in land ownership through elephant compatible development.

26. *Identification of economic incentives for affected communities.* This will finance studies to identify viable economic incentives for affected local communities and development of policies and procedures and a governance mechanism for provision of such economic incentives. Such provisions include, for example, improving the existing insurance schemes or introduction of new insurance schemes, compensation mechanisms to mitigate the impact of elephant destruction and promotion of opportunities for community-managed nature-based tourism (such as elephant viewing) in order to demonstrate the economic benefits to communities of coexistence with elephants.

27. *Update the national master plan for HEC mitigation and development of HECOEX models for other areas:* This will finance the updating of the national master plan for mitigation of the human-elephant conflict and developing practical models for HECOEX in other areas.

Component 3: Protected Area Management and Institutional Capacity (US$24.2 million)

28. Component 3 will support interventions in PAs in compliance with the Fauna and Flora Protection Ordinance (FFPO) and the Forest Conservation Ordinance (FCO); support nature-based tourism development, and strengthen the institutional capacity and investment capability for conservation and management.

29. ***Sub-component 3(a): Protected area conservation and management (US$11.6 million).*** This sub-component will finance the updating and/or developing of PA management plans where needed and the implementation of PA management plans. Priority PAs in the DWC and FD PA network are eligible for support under this sub-component, covering terrestrial, marine and wetland PAs. Conservation and management activities eligible for funding include: (a) the rehabilitation and development of water resources within PAs for wildlife; (b) habitat management, including control of invasive species, habitat creation and habitat enrichment, etc.; (c) rehabilitation and expansion of the road network within PAs for reducing tourism pressures and improving patrolling; (d) improvements to PA management infrastructure for better management of forest and wildlife resources; (e) species monitoring and recovery programs; (f) protection of inviolate areas for species conservation; (g) implementation of real time field based monitoring systems; (h) strengthening enforcement through the introduction of SMART (Spatial Monitoring and Reporting Tool) patrolling; and (i) improving mobility of PA staff for better enforcement.

30. The project will reward innovation, performance and accountability in PA conservation and management. A review of performance of this sub-component will be carried out at mid-term adopting the Management Effectiveness Tracking Tool of the World Bank/World Wide Fund for Nature (2007). Based on the findings of such review, project funds may be reallocated

to better performing PAs or to other PAs. This competitive element is expected to improve efficiency and promote more cost-effective and relevant interventions.

31. ***Sub-component 3(b): Nature-based Tourism in protected areas (US$6 million).*** This sub-component aims at enhancing the quality of nature-based tourism through planning of nature-based tourism and visitor services in PAs, based on needs and carrying capacity assessments. The sub-component will support the: (a) preparation of plans for enhancing nature-based tourism in selected PAs, including establishing the optimum number of visitors; (b) development and renovation of visitor services infrastructure, such as construction and renovation of visitor centers, comfort facilities, eco-friendly park bungalows and camp sites, and infrastructure for new visitor experiences; (c) construction of nature trails, wayside interpretation points, observation towers, wildlife hides, and canopy walks; and (d) development of comprehensive accreditation systems for nature-based tourism services, including related guidelines and others.

32. ***Sub-component 3(c): Institutional capacity and investment capability of DWC and FD (US$6.6 million).*** This sub-component will support activities to strengthen the institutional capacity of the DWC and FD to implement reforms and decentralized decision making. It will finance activities to improve skills and capacity for adaptive and effective management of PAs. It will also support capacity strengthening including the infrastructure development at the National Wildlife Research and Training Center and the Sri Lanka Forestry Institute and its affiliated institutions, setting up of the DWC Marine Unit and forensic laboratory. It will also finance development of monitoring and evaluation capabilities, targeted studies, technical assistance and equipment for long-term monitoring of status of critical biodiversity and forest resources, setting up of the project website and maintenance, monitoring and evaluation (M&E) of project results and development of capacity to co-manage wildlife and forest resources with communities and other stakeholders.

Component 4: Project Management (US$1.0 million)

33. Component 4 will finance the Project Management Unit (PMU) and implementing agencies in project management, project monitoring and evaluation, through the provision of incremental operating funds, consulting services, transportation, equipment and training of administrators covering range of topics, such as administration, planning, budgeting, fiduciary activities, safeguards and monitoring and reporting on project implementation.

B. Project Financing

34. The selected lending instrument is an Investment Project Financing. The Project will be financed through a US$45.0 million International Development Association (IDA) Credit.

Project Cost and Financing

35. The following table provides the project costs by components:

Project Components	Project cost (US$ million)	IDA Financing	percent Financing
1. Pilot Landscape Planning and Management	2.8	2.8	100
2. Sustainable Use of Natural Resources and Human-Elephant Co-existence	17.0	17.0	100
3. Protected Area Management and Institutional Capacity	24.2	24.2	100
4. Project Management	1.0	1.0	100
Total Costs	**45.0**	**45.0**	**100**
Total Project Costs	45.0	45.0	
Total Financing Required	**45.0**	**45.0**	**100**

C. Lessons Learned and Reflected in the Project Design

36. The project design seeks to incorporate important lessons from international, regional and national conservation and natural resources management experiences. The development of an effective model for conservation and mainstreaming natural resources management into rural development will need to confront and balance the complex demands on Sri Lanka's natural resource base and environment. Demonstrating new approaches, scaling up best practices and learning from accumulated experiences and most recent scientific and economic research can have important and longer lasting impacts – once they are shown to be effective. Therefore, the project has been designed on past experiences both locally and internationally, applied with care for local context.

37. Past donor interventions in the forestry and wildlife sectors in Sri Lanka have shown that project ownership by the respective institutions is critical for sustainable outcomes. The project therefore builds on the foundations of reform and institutional development initiated under Asian Development Bank financed Forest Resource Management Project and Asian Development Bank/Government of Netherlands/Global Environment Facility (GEF) financed Protected Area Management and Wildlife Conservation Project, where the management of forest and wildlife resources was to be decentralized. The project is designed to respond to demands at the field level, particularly those identified through participatory planning processes both at community and PA management levels.

38. Resources needed to tackle the conservation challenges and mainstreaming natural resources management into rural development in Sri Lanka far exceed the available project funds. Prioritization required difficult trade-offs that were determined in consultation with GoSL. On account of the economic magnitude and speed of the losses from ecosystem degradation, an alarmist alternative was considered that would provide funding entirely and only to protect PAs amidst accelerating ecosystem destruction. This option was rejected because it would not protect the corridors that are important for long-term genetic viability, and will not provide benefits to the people. Moreover, since a majority of wild elephants live outside the DWC PA system, this approach would not have resolved the HEC problem. This project has

benefited from the growing body of empirical evidence on the medium-term performance of Integrated Conservation and Development Projects. Integrated Conservation and Development Projects seemed to offer the prospect of promoting conservation and rural development simultaneously and often without any need for explicit investments in habitat and biodiversity protection and investments, becoming unsustainable as the project closes. The proposed project therefore adopts a pragmatic approach that focuses on competitive and demand-driven funding that will improve the livelihoods of people living in the adjacent areas of PAs, particularly those impacted by or impacting the integrity of environment and natural resources. Based on previous experiences, it is also recognized that sustainability will depend on linkages created to access the markets for the products and services emanating from livelihoods and having access to concessional local financing on a long-term basis.

39. Project preparation involved consideration of whether to include or exclude information/data collection needed for the management of HEC issues. Although, good policy and effective action on the ground are founded on good science, there is inadequate science-based information/data in Sri Lanka. At present, the GoSL annually incurs high cost of elephant drives, translocations and construction of electric fences around PAs (approximately US$3 million annually) with limited success in reducing the HEC. While the DWC is aware of the limited long-term effectiveness of such measures, public and political pressure, demands such actions in the absence of scientific data. Designing effective HECOEX interventions that are adaptive forms of conservation management rests on the availability of good information. Hence, data collection on elephant ranging patterns and behavior is integral to developing appropriate HECOEX models for the HEC mitigation.

40. The conventional approach to managing the HEC by translocation and confinement of elephants to the DWC PAs will not be considered under the project. Studies and implementation experiences have shown that the translocation and confinement approach is not viable and may in fact jeopardize the survival of elephants, both within and outside PAs and has little or no impact on reducing the conflict. In keeping with the national policy for the conservation and management of wild elephants in Sri Lanka, a landscape conservation strategy has been adopted that aims at allowing elephants to continue ranging outside Pas, and simultaneously protecting human habitations and permanent agriculture. Similar initiatives have been implemented in Africa, including in the Zambezi Heartland, where one of Africa's largest elephant populations roam a vast landscape that crosses national boundaries of Mozambique, Zambia and Zimbabwe.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

41. The Project's institutional implementation structure comprises relevant institutions at national and sub-national levels with distinct decision-making and accountabilities based on their mandates and implementation responsibilities. Institutional responsibilities are summarized below. They are described in more detail in Annex 3 and in the Project Operations Manual (POM).

42. **Lead Ministry and Project Steering Committee**. The MoMDE will lead overall project implementation based on the overall environmental and natural resources management

mandate of the Ministry. The MoMDE has an established policy and planning framework as well as capacity to manage donor-financed operations. A Project Steering Committee (PSC), co-chaired by the Secretaries of the MoMDE and MoSDW, has been established to ensure coordinated policy and implementation guidance for technical, fiduciary and safeguards from both ministries to the project implementing agencies.

43. **Inter-ministerial Project Management Unit (PMU)**. Based on their respective mandates and jurisdictions, the DWC and FD head offices and field offices will be responsible for overall project implementation, supervision and monitoring of all project activities undertaken within their jurisdiction. Project implementation would be through regular staff of the DWC and FD. Because the two departments are located in separate ministries and have different levels of capacity to manage a Bank-financed project, an inter-ministerial PMU, headed by a Project Director, will be established that will be responsible for institutional coordination between the DWC and FD. The PMU will be housed in the MoMDE. The PMU will also be responsible for the management of fiduciary (procurement/ financial management) requirements, coordinating and undertaking safeguards, monitoring and evaluation activities, and project reporting. The PMU will also provide secretariat support to the PSC and Technical Review Committee.

44. **Technical Review Committee (TRC)**. The TRC will be set up for Components 1 and 2 that require expertise beyond the project implementing agencies. The TRC will review the technical soundness of activities selected through strategic landscape plans, CAPs, and HECOEX investment activities and related research and provide recommendations to the PSC. It will bring experts with knowledge on wildlife and forestry research and development, project management, human-elephant co-existence, spatial planning, community business development, and social development including citizen engagement. Depending on the area of review, it will also include representatives of Department of National Planning, United Nations Development Programme GEF Small Grants Program, United Nations REDD+ Program and the Government of Australia funded Community Forestry Program.

45. **Citizen Engagement.** The project has identified a mechanism to involve communities and their representatives in making decisions and for ensuring greater positive impact. For the participatory planning processes under Components 1 and 2, the PMU and implementing agencies will design a citizen engagement strategy with the objective to give voice and opportunity to various stakeholders in the planning process and impelling various plans. Two citizen engagement indicators, namely, number of strategically planned pilot landscapes with citizen participation (Indicator 6) and percentage of beneficiaries feeling that properties and crops have increased protection and livelihoods have been enhanced due to project investments (Indicator 8) have been included as part of the results framework of the project.

B. Results Monitoring and Evaluation

46. Overall responsibility for project results will rest with the PMU. A monitoring matrix to track inputs, outputs and outcomes, with intermediate and key performance indicators has been developed for the project. Outcomes and outputs will be monitored to evaluate progress during implementation based on data compiled by the PMU, FD and DWC. The PMU will be supported through technical assistance to undertake M&E, including targeted surveys and assessments as

defined in the results framework in Annex 1 and in the POM. Gender disintegrated data will be collected and assessed as part of reporting on beneficiaries and citizen engagement. Capacity building for the DWC and FD will be provided through sub-component 3(c) to monitor the project results and long-term conservation status of key ecosystems. The project has also made provisions to undertake fiduciary and safeguard monitoring on a continuous basis.

C. Sustainability

47. The project is designed with environmental sustainability as its core objective. The project's long-term sustainability will depend on the awareness and sensitivity by the government and the public of the value of protecting and nurturing its natural endowments. The results expected to be achieved under the proposed project are highly likely to be sustained beyond its five-year implementation period because of the reasons noted in the paragraphs below.

48. Technical support to the intended project beneficiaries will be provided through the existing government system whose capacity in PA and community-based ecosystems management will be strengthened under the project to ensure effective implementation of the GoSL's policies and programs on environment and natural resources management. It is expected that demand-driven financing from the GoSL consolidated funds will continue using systems and ecosystems management modalities introduced or improved by the project. The project's investments in institutional capacity building of the FD and DWC to implement the reforms put in place in recent past for conservation and management and developing incentives for better participation and performance, particularly focused on field offices are expected to change the governance of institutions to deliver their mandates effectively over the long-term.

49. The focus on developing revenue earning potential of natural ecosystems and assessing possibilities of introducing payment for ecosystems services are expected to yield long-term financing for ecosystems management.

50. The project is designed to address environmental and natural resources management issues as well as livelihood improvement interventions for poverty reduction and resilience building associated with environmental and natural resources management. Community beneficiaries will have financial and other incentives, such as co-management of forest resources, partnerships and technology for livelihood development and knowledge for: (a) sustaining livelihoods that are compatible to the ecosystem functioning and climate change resilient, and (b) benefiting from ecosystems services. These will generate sustainability as a result of increased understanding of the value of ecosystems for the wellbeing of communities living adjacent to and impacted by forest and wildlife resources.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

51. The overall risk rating for this project is "Moderate". The following provides the assessment of the risks rated "Substantial" and mitigation measures to reduce these risks:

52. ***Institutional Capacity and Fiduciary:*** The MoMDE has some experience in the

implementation of externally-financed projects, including the World Bank-financed Dam Safety and Water Resources Planning Project (P093132). The MoSDW is a new ministry formed in September 2015 without prior experience in managing projects. The DWC and FD have limited experience with implementing externally-financed projects on their own, although there is significant technical capacity to undertake project activities. There is a proposed decentralized fund flow for some activities, which requires many levels of accountability. In order to mitigate potential issues of managing the project including fiduciary standards, a PMU with adequate number of qualified and experienced staffing will be set up under the MoMDE to provide overall project management support, as well as operational and coordination support to all project entities. In the interim the PMU of the Dam Safety and Water Resources Planning Project will provide fiduciary support until project-specific PMU is established.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

53. The economic and financial analysis for project quantifies a subset of the net benefits that the project activities are expected to provide (refer to *Annex 5* for details). The project will produce both tangible and intangible benefits. In the absence of relevant data on ecosystem services and their values, it is difficult to quantify the magnitude of the benefits generated by the project. A pragmatic approach has therefore been used to determine the robustness and effectiveness of the interventions. The analysis focuses on the potential costs and benefits of project's key investments, based on the scientific literature and recent World Bank studies undertaken on investments in natural resources management.

54. Component 1 and Sub-component 2(a) finance activities to mainstream natural resources management into spatial development and sustainable livelihoods. Conservation will only be possible if the standard of living of the key beneficiaries is improved. This improvement is associated with the incorporation of biodiversity-friendly and climate-smart production/livelihood practices, allowing production increase and diversification as a strategy for access to markets, while favoring conservation of natural resources. Important positive co-benefits of such investments will accrue ecosystem services such as improved health of watersheds, enhanced carbon sequestration and groundwater aquifer recharge while protecting natural resources. The financial returns from mainstreaming natural resources management into spatial development and livelihoods are difficult to measure as investments are difficult to predict given its demand-driven nature, diversified livelihood and productive practices, and constantly changing spatial development. However, a World Bank study (2010) finds that the total value of watershed ecosystem services in the Southern Province varies from a low of US$2,128 per hectare (ha) in the Muthurajawela Marsh to as much as US$622,845/ha for coral reefs. The Millennium Ecosystem Assessment estimates an average global value of US$3,274 for watershed benefits. In comparison, the average revenue (defined as average yield times average farm price) from paddy cultivation is estimated at about US$750/ha. After deducting input costs and the opportunity cost of time, the payoffs (profits) from paddy cultivation will be much lower. These figures imply that the public benefits from conservation will outweigh the private benefits from paddy farming (the dominant crop in this area).

55. Under Component 2(b), successful HEC management pilots already identified will be

scaled-up, new methods will be introduced and a strategic plan for management of elephants will be implemented with investments estimated at US$11 million over 5 years. While the HEC mitigation measures, including livelihood development, will contribute both to poverty alleviation and environmental sustainability, the benefits of Component 2(b) are economically more relevant as "avoided costs". For the economic analysis, the avoided costs comprise: (a) damaged crops and property; (b) mitigation expenditures (i.e. fences); and (c) elephant and human deaths. Since data are highly variable on temporal and spatial terms and depend on the sources and methods used, the analysis of the specific costs involved a comparison of three scenarios: low, medium and high cases. Under the low case scenario, assuming US$11 million of investments over the project's 5-year implementation period and a discount rate of 12 percent over 20 years, the Net Present Value (NPV) of the investment costs will be US$8.1 million while the NPV of the benefits is US$14.4 million. The net benefits of US$6.3 million imply a benefit-cost ratio of 1.8 and an Economic Rate of Return (ERR) of 25.4 percent. Component 2(b) activities are above the break-even point of viability from an economic sense under the low case scenario, even if other additional benefits generated by activities were excluded.

56. The project will entail an investment of US$11.6 million on sub-component 3(a) (enhancing ecosystem conservation and management) and US$6.6 million on sub-component 3(c) (strengthening knowledge and national capacity for ecosystem conservation and management), totaling US$18.2 million on better management of environmental services. Assuming that watershed benefits are at the lower bound (US$2,128 per ha per year) with a discount rate of 12 percent over 20 years, the project will break even, if it manages to preserve only 975 ha of habitat with benefit to cost ratio of 1.62. Under a sensitivity analysis that lowers the discount rate to 5 percent (which may be justified for environment projects), only 685 ha will have to be preserved in the lower bound scenario with benefit to cost ratio of 1.58. On the other hand, if the benefits were at the Millennium Ecosystem Assessment benefit level (US$3,274 per ha per year), then the project will need to preserve only 625 ha of habitats to be considered cost-effective with a discount rate of 12 percent. The project envisages the preservation of up to 100,000 ha midway through the project cycle, reaching 200,000 ha after 5 years. The above analysis indicates solid benefit-cost ratios and clearly justifies that the proposed investments are economically worth undertaking.

57. The project also proposes an investment of US$6 million under the Component 3(b) for the enhancement of the quality of nature-based tourism in PAs over five years. These costs can be recovered with increased economic activity from nature-based tourism. This can be achieved either through increased spending (holding visitation rates constant) or an increase in visitors (holding spending constant), or some linear combination of the two.

58. *Green House Gas* (GHG) *Accounting*. With the absence of exact geographic coverage of project investment, non-financial/economic emissions reduction and carbon stock analysis that will likely result due to project activities have been undertaken. It is predicted that 5,000 ha of degraded land will be supported with assisted regeneration activities within PAs, 195,000 ha of existing forests will be protected and 5,000 ha of reforestation of degraded forest land and community areas will be undertaken. It has been estimated that with project interventions, approximately 6.62 to -14.36 million tCO2eq of net GHG emissions can be expected during the 5 years of the project period. Once the project sites are identified during project implementation,

a more robust analysis of benefits of reduced emissions and protected carbons stocks will be assessed and reported.

B. Technical

59. The project design is technically, institutionally and operationally sound. It is based on successful interventions on ecosystems conservation and management in Sri Lanka and other countries. The design is backed by analytical work carried out by the World Bank in recent past, including Fiscal and Economic Benefits of Environmental Actions: Policy Options Note (2014), Nature-Based Tourism and the Human Elephant Conflict in Sri Lanka (2010), and Valuation of Environmental Services in Sri Lanka: A Case Study of Agriculture and Watershed Benefits in the Southern Province (2010). The design of the project integrates the guidelines developed for ecosystems approach by the United Nations Convention of Biological Diversity. The project applies a comprehensive intervention strategy using the ecosystem as the primary planning and implementation unit, and promotes a set of technically proven demand-driven investments that take environmental, productive and social challenges and opportunities into consideration. Furthermore, the design of the project addresses the overall technical and institutional requirements for the effective provision of support services to ecosystem-level interventions. It provides adequate financing for training, technical assistance and capacity building to implementing agencies, communities and other relevant institutions.

60. Lessons from similar projects and the analysis of relevant information have been instrumental in the design of the project. The landscape approach taken up in a pilot scale within the project is still a relatively a new concept for spatial planning and management. Therefore, while reflecting the global experiences and lessons learned so far, the design has the flexibility to adapt to local context and needs. Community engagement in natural resources management and benefit sharing with communities take the experiences and lessons from a number of on-going programs. It integrates the operational guidelines developed for planning, implementation and assessing community action plans of the Community Forestry Program financed by the Government of Australia. It also takes lessons from the GEF Small Grant Program. Similarly, the design of HECOEX interventions for permanent agriculture and villages are based on successful pilot projects in Sri Lanka. Piloting activities on HECOEX in areas of slash and burn agriculture are based on research activities carried out by the DWC and strategies identified based on research data. The project design conforms to international best practices and lessons learned from GEF/World Bank and other projects on the management of PAs. These indicate, effective management and operation of PAs depends on adequate financial resources, a consistent budget and capacity to manage PAs. The project includes support to ensure sustainability of PA operations by developing revenue earning potential of PAs as a means for long-term financing and has made provisions to explore and test other sustainable financing modalities. It also gives adequate emphasis to build capacity of PA management staff on effective management of PAs.

C. Financial Management

61. The proposed Financial Management (FM) procedures are in line with fiduciary requirements of World Bank Operational Policy (OP) 10.00. The project's FM risk has been assessed as "*Substantial*" based on the limited FM capacity, a decentralized fund flow, and weak payment and reporting structures of implementing agencies. With qualified and experienced

staff in place and the adoption of accountabilities and FM processes that are described in the POM, fiduciary risks are expected to be minimized.

62. The primary responsibility for FM and oversight will be with the PMU under the MoMDE with dedicated FM staff working on a full time basis. The PMU will be established by June 30, 2016. In the interim, the FM capacity will be met by existing FM staff of the Bank-financed Dam Safety and Water Resources Planning Project under the MoMDE. When considering FM staffing options for the PMU, preference will be to draw on experienced staff of government ministries and departments that have prior experience in managing donor-financed operations. A decentralized fund flow, payment and a bottom-up reporting model is envisaged for some share of the project funds commensurate with the geographically dispersed implementation arrangements. The FD and DWC at head office as well as at regional and district levels will have responsibility for the FM of some of the project activities. Their FM functions will be streamlined according to the FM section of the POM.

63. Quarterly Interim Unaudited Financial Reports (IUFRs) will be submitted to IDA within 45 days of end of each quarter by the PMU. The project will be subject to continuous internal audit. Year-end external audits will be carried out by the Auditor General's Department. Currently there are no overdue audits or ineligible expenditures under the main executing ministry and the two implementing agencies. A Designated Account (DA) will be set up and maintained in US$ at the Central Bank of Sri Lanka for IDA funds. Replenishment of the DAs will be based on the IUFRs.

D. Procurement

64. The project Procurement risk is rated "*Substantial*". Although the FD has not directly worked on World Bank-funded projects, the MoMDE which is the line Ministry to the FD is currently managing a World Bank-funded Dam Safety and Water Resources Planning Project. However, the MoSDW and DWC do not have exposure to Bank funded projects. In the interim, the procurement capacity will be met by existing procurement staff of the Bank-financed Dam Safety and Water Resources Planning Project under the MoMDE. Agreed risk mitigation measures to be implemented include: (a) the recruitment of qualified and experienced procurement staffs for the new PMU; and (b) the establishment of a procurement monitoring system within the project as described in POM. In the interim, training will be provided to the procurement staff of the MoMDE, DWC and FD by the World Bank to undertake the procurement activities until the PMU is set up. Once the new PMU is in place the risk will be reassessed and adjusted accordingly.

65. Procurement for the proposed Project will be carried out in accordance with: World Bank's "*Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers*" of January 2011, revised July 2014 (Procurement Guidelines); "*Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers*" of January 2011, revised July 2014 (Consultant Guidelines); and the provisions stipulated in the Financing Agreement. "*Guidelines on Preventing and Combating Fraud and Corruption in projects Financed by IBRD Loans and IDA Credits and Grants"* dates October 15, 2006 and updated January 2011, shall also apply to the project. Unless otherwise agreed with the Bank, the Bank's Standard Bidding Documents,

Requests for Proposals, and Forms of Consultant Contract will be used. In case of conflict between the Bank's procurement procedures and any national rules and regulations, the Bank's procurement procedures will take precedence.

66. For each contract to be financed by IDA, the procurement method, the need for prequalification, estimated costs, prior review requirements, and time frame are to be agreed between the Borrower and the Bank and included in the initial Procurement Plan for the first 18 months of implementation. The POM discusses the project procurement methods, procedures, arrangements, including appropriate procedures at the field level, and arrangements for disclosure, complaint handling and procurement audits in detail.

E. Social (including Safeguards)

67. **Involuntary Resettlement (OP 4.12)**. Involuntary land acquisition to be financed by IDA is not expected to take place under the project. Some of the ecosystem conservation and management activities, particularly landscape planning and HECOEX activities involving slash and burn agriculture areas, are likely to affect existing land use patterns and livelihood activities of some communities in the project areas and may include access restrictions to natural resources. OP 4.12 is therefore applicable. Because the details of the project-supported site-specific activities will not be available until later during project implementation, a Social Management Framework (SMF) has been prepared. The SMF includes provisions for the assessment of social impacts that may arise during implementation, measures for social risk mitigation including Process Framework for Access Restrictions, institutional arrangements for conducting Social Impact Assessment (SIAs), and monitoring. All relevant activities that have social impacts identified through social screening will be subjected to specific SIAs and subsequent preparation of social mitigation measures.

68. **Indigenous Peoples (OP 4.10)**. OP 4.10 is applicable to ensure adequate recognition of risks, needs, and demands of indigenous peoples (IP) in the project areas. The presence of IPs have been determined based on the specific rights identified for *Vedda* (former forest dwelling) communities in the regulation of the FFPO. An IP Policy Framework (IPPF) has been prepared that describes the process to be followed in preparing an IP Development Plan (IPDP). This will be applicable if the project activities are to be implemented in PAs accessed by *Vedda* communities or in the surrounding landscape where *Vedda* are present.

69. Community consultations have been an integral part of the project preparation and will continue during implementation. Consultations in some of the potential areas managed by the DWC and FD have been carried out in November 2015 to share the details of the proposed project, safeguards measures proposed to be put in place and to obtain community feedback on potential social and environmental impacts associated with the project. A three-tiered grievance redress mechanism (GRM) will be established as detailed out in the SMF, once the specific sites have been identified for investments. This includes local level Grievance Redress Committees, PSC and judiciary. The records of all community grievances brought to the attention of the GRM, the processes of how the GRM dealt with those grievances, the solutions sought and further appeals made to the PSC will be filed at the PMU on behalf of project for transparency and future reference. A database containing the grievance information will be established at the PMU and relevant information will be made available to public. The SMF and IPPF have been

disclosed to the public on January 28, 2016 within the country and on January 28, 2016 in Infoshop. During project implementation, the relevant social safeguard documents to be prepared will be also disclosed to the public.

F. Environment (including Safeguards)

70. **Environmental Assessment (OP 4.01)**. The project is classified as Environmental Category B and it is expected to generate positive environmental impacts. Some project activities may involve small-scale civil works. The associated negative impacts are expected to be largely on-site and easily mitigated with proper planning and sound environmental practices.

71. **Forests (OP 4.36) and Natural Habitats (OP 4.04)** are applicable under the project. Although no adverse impacts on the quality or health of forests or any degradation of natural habitats are expected to be caused by the project, these operational policies will apply to encourage the DWC and FD to exercise maximum due diligence in carrying out project activities in PAs and other sensitive ecosystems.

72. **Physical Cultural Resources (OP 4.11)** is applicable because the landscapes considered and some of the potential PAs that will be supported may have historically or culturally significant sites.

73. **Pest Management (OP 4.09)** is applicable under the project. The project will not finance purchase, transportation or storage of pesticides. It will encourage the use of Integrated Pest Management practices in relevant livelihood support activities under the Component 2.

74. As details of site-specific activities are not yet available, an Environment Assessment and Management Framework (EAMF) has been prepared. The EAMF provides guidance for environmental screening and analysis required for all interventions supported by the project that have the potential to trigger negative environmental impacts. The EAMF includes: (a) an assessment of generic issues typically associated with the type of intervention anticipated under the project; (b) measures for environmental risk mitigation; and (c) institutional arrangements and capacity building needs for conducting environmental assessments (EAs), preparing environmental management plans (EMPs), implementing and monitoring. The project will not fund any physical activity with significant negative impacts without prior environmental screening, analysis and submission of an acceptable EMP. All EAs or EMPs will be reviewed and cleared by the Bank prior to fund disbursements. The EAMF also includes specific provisions to: (a) assess the potential impacts on sites considered to have historical or cultural significance prior to any activities being undertaken on the ground, and (b) for the management of physical cultural resources that may be discovered during project implementation. The EAMF also includes screening procedures for pest management and pesticide use for activities considered under Component 2 that may involve agriculture activities. The EAMF has been disclosed to the public on January 28, 2016 within the country and on January 28, 2016 in Infoshop. During project implementation, the relevant safeguard documents to be prepared will be also disclosed to the public.

75. **Climate and Disaster Risk Screening.** The project undertook a climate and disaster risk screening of the two key sectors of focus in this project (forestry and biodiversity). Based on this

screening and the geophysical hazard analysis, forestry and biodiversity are currently slightly exposed to climate variabilities and disaster risks with potentially low impacts. However, future changes in climate have the potential to increase the level of vulnerability and exposure. Under the current development context and population growth, the pressure on natural resources, especially land and soil, is increasing significantly. In the absence of sustainable conservation practices, including adequate legal enforcement of existing policies, the vulnerability and exposure to major weather events will increase. Therefore, the overall project design incorporates measures, both physical and non-physical investments, to reduce the level of exposure and vulnerability of forestry and biodiversity to disaster risks and potential impacts.

G. World Bank Grievance Redress

76. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or can occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate GRS, please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

Country: Sri Lanka

Project Name: Ecosystem Conservation and Management Project (P156021)

Results Framework

Project Development Objective (PDO): Improve the management of ecosystems in selected locations in Sri Lanka for conservation and community benefits

Results Indicators	Core	Unit of Measure	Base line	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection
				YR 1	YR 2	YR 3	YR 4	YR 5			
PDO Level Results Indicators											
Indicator 1: Direct project beneficiaries (#), of which female (percentage)	☒	Number (percent female)	0	0	0	5,000; (10 percent)	5,000; (10 percent)	15,000; (30 percent)	Mid-term and prior project closure	Community beneficiary survey	PMU through a consultant
Indicator 2: People with improved access to income generating activities as a result of project interventions (#)	☐	Number	0	0	0	5,000	5,000	10,000	Mid-term and prior project closure	Community beneficiary survey	PMU through a consultant
Indicator 3: Villages and agriculture plots protected as a result of human-elephant co-existence activities (#)	☐	Number	0	0	0	25	60	75	Annually (last 3 years)	HECOEX performance assessment	PMU through a consultant with inputs from MoSDW
Indicator 4: Areas brought under enhanced biodiversity protection (ha)	☒	ha	0	0	0	100,000	100,000	200,000	Mid-term and prior project closure	Management Effectiveness Tracking Tool Report	M&E Specialist of PMU, with inputs from DWC & FD
Indicator 5: Visitor revenue of selected PAs increased as a result of project interventions (%)	☐	Percentage	0	0	0	5	7.5	10	Annually last 3 years	PA ticketing data and visitor satisfaction survey	M&E Specialist of PMU, with inputs from DWC & FD and Survey by consultant

Project Development Objective (PDO): Improve the management of ecosystems in selected locations in Sri Lanka for conservation and community benefits											
Results Indicators	**Core**	**Unit of Measure**	**Base line**	**Cumulative Target Values**					**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**
				YR 1	**YR 2**	**YR 3**	**YR 4**	**YR 5**			
Intermediate Results Indicators											
Component 1: Pilot Landscape Planning and Management											
Indicator 6: Strategically planned pilot landscapes with citizen participation (#)	☐	Number	0	0	1	2	2	2	Year 2 and 3	Landscape plans and consultation minutes	M&E Specialist with inputs from MoSDW
Component 2. Sustainable use of natural resources and human-elephant co-existence											
Indicator 7: Community Action Plans prepared responding to sustainable use of natural resources (#)	☐	Number	0	0	25	50	75	75	Annually from year 2	CAPs and consultation minutes	M&E Specialist with inputs from FD and DWC
Indicator 8: Beneficiaries feel that properties and crops have increased protection and livelihoods have been enhanced due to project investments (percentage)	☐	Percentage	0	0	0	50	50	75	Mid-term and prior project closure	Community beneficiary survey	PMU through a consultant
Indicator 9: HECOEX strategies adopted (#)	☐	Number	0	0	0	1	1	2	Mid-term and prior project closure	HECOEX performance assessment	PMU through a consultant with inputs from MoSDW
Component 3: Protected Area Management and Institutional Capacity											
Indicator 10: Monitoring systems adopted to track the conservation status of PAs (#)	☐	Number	0	0	0	2	2	2	Mid-term	Monitoring systems and their implementation review reports	M&E Specialist of PMU with inputs from DWC and FD
Indicator 11: Protected Area level nature-based tourism plans adopted (#)	☐	Number	0	0	0	7	7	7	Mid-term and final year	Nature-based tourism plans and implementation reports	M&E Specialist of PMU with inputs from DWC and FD

Project Development Objective (PDO): Improve the management of ecosystems in selected locations in Sri Lanka for conservation and community benefits											
Results Indicators	**Core**	**Unit of Measure**	**Base line**	**Cumulative Target Values**					**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**
				YR 1	**YR 2**	**YR 3**	**YR 4**	**YR 5**			
Indicator 12: Staff trained (#)	☐	Number	0	**0**	0	100	200	250	Annually (last 3 years)	Training and post-training evaluation reports	M&E Specialist with inputs from DWC & FD

Indicator Descriptions

PDO Level Results Indicators*	**Description (indicator definition, etc.)**
Indicator 1: Direct project beneficiaries (#), of which female (percentage)	This is a core indicator and measures people who directly derive benefits from an intervention. Direct beneficiaries include community members who will receive capacity building, livelihood support, and benefits from community forestry, ecosystem services and HECOEX activities. Measurement also includes gender disaggregated data to report on percentage female amongst the beneficiaries. Surveys will be done using a consultant or third party or a Non-Governmental Organization. Baseline has been defined as zero.
Indicator 2: People with improved access to income generating activities as a result of project interventions (#)	This is a custom indicator and measures the number of people living adjacent to targeted ecosystems who receives improved access to income generating activities. This will includes benefits derived within the protected ecosystems and unprotected/multiple use ecosystems and will measure the extent to which local peoples' livelihood have improved as a result of the interventions. This measure will collect data based on the activities approved from CAPs and selection of beneficiaries, which will be monitored and reported by the DWC and FD. This measure also captures gender disaggregated benefits through the community beneficiary surveys. The surveys will also collect and report on benefits with data related to ethnicity and indigenous people in adjacent area of forests where such distinction is present. The overall aggregation and reporting on ethnicity and indigenous people will be based on significant presence of ethnic minorities and/or indigenous people. Baseline has been defined as zero.
Indicator 3: Villages and agriculture plots protected as a result of human-elephant co-	This is a custom indicator and measures the number of villages (covering both properties and lives) and agriculture plots that will be protected as a result of activities undertaken to ensure human-elephant co-

existence activities (#)	existence. Once the most threatened villages and agriculture areas due to HEC are identified, a survey will be carried out to collect data on properties and other non-agriculture assets, population data and agriculture types and area as well as impacts due to the HEC in the targeted areas in the baseline year. Baseline has been defined as zero.
Indicator 4: Areas brought under enhanced biodiversity protection (ha)	This is a core indicator and measures the biodiversity protection by formally converting an area into a protected area and establishing a functioning management system; or, improving the management system of an existing protected area. This is a proxy indicator to monitor the management of ecosystems for conservation. This will measure the operationalization of at least a basic functioning management system with a management plan, resources and capacities established at a minimal level to achieve the area's biodiversity protection goals. The final reporting will be aggregated for the total areas of PAs in the network that will participate in the project with basic functioning management system or above. To verify the existence of a management system and the functioning level thereof, the score of at least 35 percent that results from completing the Assessment Form of Section II: Management Effectiveness Tracking Tool for Protected Areas of Objective 1: Catalyzing Sustainability of Protected Area Systems in the GEF's Tracking Tool for Biodiversity Projects. The total possible score will be calculated by answering applicable questions in the Assessment Form based on the actual threats to biodiversity in a particular protected area. Consequently, the total possible score is specific to a protected area. It is calculated by adding the highest score corresponding to each question of all applicable questions of the Form. Baseline has been defined as zero.
Indicator 5: Visitor revenue of selected PAs increased as a result of project interventions (%)	This is a custom indicator that measures the increase of revenue to PAs where quality of nature-based tourism have been promoted by the project. 2016 will be the baseline year and the indicator will be established by end of the calendar year using the ticketing data. Baseline has been defined as zero. It will also measure in the final year through a survey to what extent the development of interpretation services and facilities supported under the project in participating PAs ensured visitor satisfaction, assessing information related to value for money, probability for revisiting PA and willingness to pay more for the experience.
Intermediate Results Indicators	**Description (indicator definition etc.)**
Indicator 6: Strategically planned pilot landscape plans with citizen participation (#)	This is a custom indicator and measures the number of strategic landscape plans developed with citizen participation by end of 3rd year. It will include the land areas brought under landscape management plans and the enabling environment put in place for sustainable land management approaches to be introduced and adopted within these landscapes. Baseline has been defined as zero. By end of each planning process, it will evaluate how the citizen engagement process has been utilized. By

	mid-term and project closure, it will assess how key priorities are implemented.
Indicator 7: Community Action Plans prepared responding to sustainable use of natural resources (#)	This is a custom indicator and measures the number of CAPs prepared that will ensure sustainable use of natural resources. It will assess how the sites for CAPs selected and relevance of prioritized activities for investment as per the sub-component 2(a) guidelines defined in POM to reach its objectives. It will review the CAPs and minutes of planning meetings. Baseline has been defined as zero.
Indicator 8: Beneficiaries feel that properties and crops have increased protection and livelihoods have enhanced due to project investments (percentage)	This is a core indicator and measures the extent to which the decision about the project, specifically planning and implementation of CAPs that impact their livelihoods reflects community preferences and human-elephant co-existence actions that provides increased protection to property and crops. This will be assessed as part of the beneficiary survey that will be undertaken for Indicator 1 and evaluation of minutes of CAP development process. Baseline has been defined as zero.
Indicator 9: HECOEX strategies adopted (#)	This is a custom indicator and measures the number of successful HECOEX strategies that will be adopted using project funding. It will be measured as part of the assessments that will take place under Indicator 3. Baseline has been defined as zero.
Indicator 10: Monitoring systems adopted to track the conservation status of PAs (#)	This is a custom indicator and measures the number of monitoring systems developed by end of 3rd year to track conservation status of PAs of the FD and DWC. It will also assess prior to project closure the operation of such systems and use of monitoring data for decision making. Baseline has been defined as zero.
Indicator 11: Protected Area level nature-based tourism plans adopted (#)	This is a custom indicator and measures the number of nature-based tourism plans developed for PAs of the FD and DWC. It will assess how the plans ensures creating supportive frameworks and partnerships with broader tourism sector, planning and managing sustainability of sites, developing authentic and memorable experiences, facilitating innovative and viable investments and effective marketing. Baseline has been defined as zero.
Indicator 12: Staff trained (#)	This is a custom indicator and measures capacity building activities aimed at strengthening skills of the FD and DWC staff to deliver the respective services and mandates. Skills are defined broadly to include knowledge and attitudes. This will be measured as the number of staff who have used the training that they received. Training encompasses any type of training organized or provided by the project (degree and non-degree courses, vocational, on-the-job training, study tours, etc.) that will improve skills related to natural resources planning, management and monitoring and coordinating with multi-stakeholders. This indicator will be measured by conducting a follow-up survey with the supervisors of staff who received training, around 6 months after the training was provided. Baseline has been defined as zero.

Annex 2: Detailed Project Description

SRI LANKA: Ecosystem Conservation and Management Project

1. The project will be implemented over five years. The project is designed along four components that are described in detail below:

Component 1: Pilot Landscape Planning and Management (US$2.8 million)

2. Sri Lanka has a long history of conservation within PAs. Fragmented institutional responsibilities and overlapping mandates, however, have led to poor effectiveness of the protected area network and made more integrated development planning a challenge in Sri Lanka. Jurisdictional controls over land do not coincide with natural ecological boundaries, often resulting in the fragmentation of natural habitats and uncoordinated interventions. Environmental decision-making in Sri Lanka has also been largely focused only on mitigating the direct impacts of development projects. The lack of integrated planning has aggravated uncontrolled development pressures, degraded ecosystem quality, and diminished the potential for environmental service provision. This trend will continue unless the GoSL reviews its current approach to biodiversity protection and takes a new more integrated planning and development approach that aligns and balances development programs with ecological or environmental priorities. More comprehensive and integrated planning is particularly important for development in areas where the country's priority protected areas are located. In support of an alternative and modern conservation approach, this component will apply a framework for making landscape-level conservation decision making developed by the World Wide Fund for Nature and the World Conservation Union to help facilitate the planning, negotiation, and implementation of activities across entire landscapes dominated by conservation areas. The approach will also seek to better integrate top-down planning with bottom-up participatory approaches.

3. The component will support the preparation of strategic conservation landscape plans on a pilot basis for two landscapes and the implementation of selected priority interventions identified in these strategic landscape plans. The landscape level planning process will be led by the Sustainable Development Secretariat of the MoSDW in collaboration with relevant spatial planning agencies of the GoSL. It will also be supported by external technical experts that will be recruited under this component, and led in consultation with key stakeholders active in the landscape, including local authorities and communities. The component will also support the capacity building of the Sustainable Development Secretariat that will lead the component. The strategic landscape level planning process for the two selected landscapes is expected to be completed within the first year of project implementation.

4. The two landscapes pre-identified for strategic planning will include focus on a *biodiversity rich wet zone landscape* and a *dry and arid zone forest landscape*. These landscapes are also representative of different types of development pressures, in particular threats from urbanization and infrastructure development that would compromise the viability of existing ecosystems, and environmentally sensitive areas fragmented by high population densities and poor land use practices. The landscapes will contain ecologically sensitive sites and wildlife corridors outside the designated PA network and were identified in the Portfolio of Strategic

Conservation Sites/Protected Area Gap Analysis in Sri Lanka as priorities for strategic conservation interventions.

5. The strategic landscape plans will provide guidelines and principles for the management of PAs and ecosystems outside the designated PA network located in the landscape and involve: (a) the definition of opportunities and constraints for conservation action within the overall landscape; (b) identification of effective ecological networks; (c) identification of measures to secure the integrity of ecosystems and viable populations of species; (d) development of rapid assessment systems for landscape scale ecosystem quality, including the identification of high conservation value ecosystems; (e) setting out a stakeholder negotiation framework for land and resource use decisions and for balancing the trade-offs inherent in such large-scale planning approaches; and (f) recognition and use of overlapping cultural, social, and governance "landscapes" within biologically defined areas. Designated PAs in the landscape are expected to already have their own specific PA management plans. If not, PA specific management plans will be developed or updated under Component 3.

6. Landscape management prescriptions for areas outside designated PAs are expected to emerge from the planning and may include guidelines for smart green infrastructure. These will be used to influence national spatial planning agencies and other stakeholders in the planning of large infrastructure, settlements, industrial zones, and agriculture activities that need to be compatible with the surrounding ecosystems. Landscape management plans will highlight habitat needs of flagship species and related biodiversity considerations, and connectivity of forests for consideration in the GoSL's national and sectoral plans. PAs and critical wildlife corridors will be gazetted as "no development zones" because this measure will be the least costly way of ensuring compatibility between development and conservation. The planning exercise will also advocate a mitigation hierarchy that includes ecosystem conservation zones, stakeholder engagement, benefit sharing mechanisms developed for sustainable natural resources use, conservation services by the communities, environmental management systems, and biodiversity offsets.

7. The Component will also support stakeholder workshops to identify challenges, opportunity and needs for applying the strategic landscape planning and management. It will also support activities to assess the economic value and opportunity cost of environmental service of different ecosystems, particularly outside the PA network as input into the GoSL decision making on development interventions. It will further support the implementation of key elements identified in the strategic landscape plans to enhance conservation and management activities *outside* the PA network. Once the plans are in place and disclosed to public, the PMU will call for proposals. The FD and DWC will take the lead - individually or jointly - in submitting funding proposals to the PMU on behalf of the MoSDW for key interventions. On joint proposals, one agency will be the lead agency for ease of fund management and reporting. Proposals will proactively seek involvement of various stakeholders to enhance local ownership and sustainability in the landscape, including local communities, the GoSL institutions (planning agencies, local authorities, divisional secretariats, national or provincial government agencies), NGOs, universities and research institutions, private sector and community groups. Interventions can also be proposed by other stakeholders. However, proposal submission will be through the DWC or FD. Funds for implementing activities in the landscape management plans will be spent

by the FD and DWC. The MoSDW will convene the TRC for review and recommendation to be endorsed by the PSC.

Component 2: Sustainable Use of Natural Resources and Human-Elephant Co-existence (US$17.0 million)

8. Component 2 will support communities living in adjacent areas of PAs and other sensitive ecosystems to plan natural resource use and develop biodiversity compatible, productive and climate resilient livelihood activities including activities to reduce deforestation and forest degradation. This component will also scale up successful pilot models to address human-elephant conflict, which impacts the lives and livelihoods of communities living in the elephant ranges. The component include two-subcomponents.

Sub-component 2(a). Sustainable use of natural resources for livelihood enhancement (US$6.0 million)

9. This sub-component will finance the development of biodiversity-compatible and climate-smart rural agriculture systems or new livelihood options, such as community-based ecotourism that promote sustainable use of natural resources for communities living adjacent to PAs or other sensitive areas. The identified livelihood options will be based on community demand and competitiveness to ensure ownership and sustainability respectively. The activities will be articulated in participatory Community Action Plans (CAPs). The detailed implementation procedures for this sub-component are included in the POM.

10. CAPs will be developed to ensure the activities identified are based on the demand and criteria of economic viability, climate resilience, and biodiversity protection. CAPs will aim to: (a) reduce deforestation and forest degradation by lowering the dependency on extractive forest resources through alternative agricultural and non-agricultural income generating opportunities; (b) enhance the productivity and environmental sustainability of agricultural lands; (c) increase business development and management capacity of communities; (d) improve soil and water conservation in agricultural lands and home gardens; (e) increase the quality and quantity of timber produced from designated woodlots and home gardens; and (f) create conservation and resource management awareness among communities. Typical activities in the CAP will include: (a) activities to improve social infrastructure, such as the rehabilitation of local water tanks for irrigation and domestic purposes; (b) the establishment of woodlots; (c) improving the productivity of home gardens; (d) agricultural and non-agricultural income-generation activities that are based on biodiversity-friendly and climate smart production and management practices, such as non-timber forest products (honey, spices, essential oils), soil conservation measures, climate resilient varieties of plants, etc.; (e) development of agro-forestry; and (f) promotion of community-based ecotourism. The sub-component will also support a community forestry program for forest-dependent communities. This program has been implemented successfully over 10 years by the FD. It is aimed at reducing deforestation and forest degradation and build on the principles of developing partnerships with local communities; introducing community management of forest resources; and benefit sharing with communities.

11. Funding of CAPs will entail a three-stage process: (a) identification and approval of sites; (b) community mobilization, capacity building and CAP preparation; and (c) proposal development for priority community actions and review by TRC to ensure adherence to the sub-component criteria and technical soundness. The PMU will convene the TRC. In areas where CAPs already exist and are ready for implementation or where implementation of some aspects of the plan are proceeding, the proposals could be submitted directly to the TRC for funding recommendation for implementation.

12. The sub-component will also support capacity building of communities and technical support on CAPs. Such support will be provided to community-based organizations (CBOs) with support from external technical assistance procured by the project and focused on improving production systems, mainstreaming biodiversity into production systems, business development and management skills, marketing strategies, and stewardship and management of land and natural resources, including local resource assessments and awareness programs. In order to foster ownership, the participating community will be expected to contribute to activities that will be financed by the project through in-kind and/or cash contributions, which will be reflected clearly in the proposals and subsequent monitoring reports. The project will not finance interventions that are detrimental to the environment and natural resources and those that are not marketable.

13. The sub-component will support the formation of CBOs in villages where such groups do not exist. CBOs are envisaged to become advocates for conservation. Membership in CBOs will be based on the family unit; and both men and women will participate and benefit from the program. Past efforts indicate that a substantial proportion of the group leaders are women and they play a leading role in the management of the affairs of the groups, thereby strengthening their status within the community. Facilitating female participation in the self-help groups and CBOs is important for increasing women's roles as producers, community members and advocates of conservation.

Sub-component 2(b). Human-elephant co-existence for livelihood protection (US$11 million)

14. Elephant habitats are declining and the frequency and severity of the HEC is increasing, calling for alternative approaches to the HEC management. Studies undertaken in Sri Lanka have shown that translocation and confinement are not a viable management strategy and jeopardize the survival of Sri Lanka's elephants, both within and outside PAs and with no long term benefit for reducing the HEC. This is largely because restricting elephants to the DWC PAs reduce their current habitat to about 30 percent of what they use at present. Most national parks are already at or even beyond carrying capacity and hold the maximum number of elephants they can support. Additionally, national parks are generally primary or mature forests providing only sub-optimal habitats for edge species, such as elephants. Over two thirds of elephants in Sri Lanka have home ranges that go beyond areas controlled by the DWC.

15. The translocation of individual crop raiding and other problem elephants have shown that the translocated elephants either try to return to their home range or indulge in problem activities in new locations close to release areas. Often translocated elephants create greater problems to communities after their release in new sites, resulting in translocation of the problem as well.

Research has shown that elephant drives that are conducted mainly in response to political and social pressures have failed to eliminate crop raiding elephants from the drive areas. While herds tend to be driven, the crop raiding males often remain behind. Communities have confirmed that the remaining males become more aggressive and develop into a bigger threat to people proceeding such drives. Construction of electric fences along the administrative boundaries of the DWC PAs has failed to yield the expected outcome of the HEC mitigation since the DWC PAs are often surrounded by forest reserves. This results in fence breaking by elephants.

16. The availability of recent telemetry data on elephant movements provides the GoSL with the opportunity to pioneer new science and observation-based adaptive management approaches which can be replicated across the elephant ranges in Sri Lanka and if successful, in the other Asian elephant range states. Successful pilot projects of HECOEX have been implemented by NGOs, which are ready to be adopted in the government's program. The concept used in these pilot projects is to provide assistance to communities to build permanent protective fences around villages (village fences) and seasonal fences around their paddy lands (paddy-field fences). Communities have taken the leadership in implementing these models with part contribution of initial costs and full responsibility for construction and maintenance of the fences. The successful HECOEX pilot projects of innovative approaches over a representative area in the South-Eastern and North-Western regions have been completed based on research, observational data, and field trials[1]. These experiences have contributed to the preparation of Sri Lanka's National Policy on the Conservation and Management of Wild Elephants ratified by Cabinet in 2006 and the National Human Elephant Conflict Mitigation Plan prepared by DWC in 2014.

17. ***Scaling up and piloting HECOEX models.*** Under this sub-component, the project will scale up successful pilots of HECOEX models. Support will be provided to explore opportunities for reducing HEC by managing elephant populations along ecological habitat boundaries rather than administrative boundaries of land. The sub-component will support the principles of the National Human Elephant Conflict Mitigation Plan of 2014 and fund key activities of the existing landscape conservation strategy that aims at allowing elephants to continue ranging outside the DWC PAs while protecting villages and paddy cultivation by fences. The agricultural fencing interventions include a seasonal electric fence erected on the perimeter of the consolidated land by the farmer organizations at the start of the cultivation season. Upon harvesting the crop, farmers will remove the fence, allowing elephants to feed on the crop residue.

18. The sub-component will also support the continuation of shifting cultivation in areas outside PAs on a pilot basis as fallow-fallen areas in shifting cultivation areas are considered optimal elephant habitats. It will also explore and implement benefits to farmers for participating in elephant conservation.

[1] Successful pilot projects have been implemented in two *Grama Niladari* divisions the Center for Conservation and Research (CCR) in partnership with the recipient communities consisting of 15 villages in the North-Western Province and a few villages of the South-East and East, with communities experiencing minimal crop and property damage. Protective fencing on the ecological boundary surrounding villages, constructed and managed by the village communities have proven successful in the pilots implemented by CCR.

19. Sites for implementing the HECOEX models will be identified during the initial stages of project implementation. Site identification will be led by the MoSDW together with the DWC, FD, the Divisional Secretariats, and other government agencies. As the HECOEX models involve extensive community participation, site selection has to be through a consultative process. Detailed proposals for the proposed sites are expected to be prepared during the first year of project implementation, including supportive assessments such as SIAs and EAs. The TRC will be responsible for reviewing the proposals and recommending them for approval to the PSC. The details of the implementation procedures are provided in the POM.

20. The people of Sri Lanka have had a benevolent attitude towards elephants throughout history, due to their religious and cultural traditions. Attitudinal surveys conducted among HEC affected populations in southern Sri Lanka confirm the benevolent attitude towards elephants, with the community requesting that measures be taken to reduce (not eliminate) elephant destruction rather than remove elephants from their areas. Such benevolence by the HEC-affected communities provides a sound foundation for up-scaling and developing HECOEX models. HECOEX models will be pioneered in MERs where elephant depredation of human settlements and paddy cultivation will be prevented by electric fencing, while elephants will be allowed to range freely in other forms of compatible land use. The sub-component will also provide incentives for regulating and managing the seasonal agricultural practices in MERs to minimize conflict and optimize habitat quality.

21. Project funds will not be used to fund translocations and elephant drives or the capture and domestication of problem elephants.

22. ***Identification of economic incentives for affected communities.*** To ensure that HECOEX models are effective tools to manage the HEC, there is a need to find mechanisms that turn wild elephants from economic liabilities to economic assets for the affected communities. This sub-component will assess the feasibility and effectiveness of a series of economic incentives, such as: (a) community benefits from activities that contributes to HECOEX; (b) payments for environmental services; (c) insurance schemes and compensation mechanisms to mitigate the impact of elephant depredation; and (d) opportunities for community-managed nature-based tourism such as elephant viewing, in order to demonstrate that coexisting with elephants has economic benefits to the community. A study will be carried out on viable economic incentives and its implementation mechanisms. Experiences in other countries of sustainable funding mechanisms from conservation revenue will be explored during implementation and adopted to suit the situation in Sri Lanka.

23. ***Update the national master plan for HEC mitigation and development of HECOEX models for other areas.*** This sub-component will support the updating of the National Master Plan for Mitigation of the Human Elephant Conflict and will finance the costs associated in procuring technical experts and consultations to update the national master plan. This activity will be led by the MoSDW.

24. It will also support the development of HECOEX models for other areas in Sri Lanka. Research on HECOEX models is currently only available for South East and North West regions while data on elephant ranging patterns the other areas of the dry zone are limited. The sub-

component would support activities to generate new information on elephant behavior, ranging patterns, ecology, demography, temporal and spatial use of the mosaic of protected and unprotected habitats and the response to management actions, to assist the DWC and the scientific community to gain a better understanding of human-elephant interactions as basis for developing the approaches for geographic locations where HEC exists but has not yet been covered by pilots. For example, data on the extent of the HEC in the Northern Province are non-existent. The data collected prior to the civil conflict indicate the presence of large elephant populations in the forests of the Northern Province. While elephants are known to have suffered some casualties from the armed conflict, habitat changes caused by the conflict as well as abandonment of villages and agricultural areas that have now been taken over by shrub jungle are likely to have increased elephant populations in some areas. With the end of the armed conflict and re-settlement of the internally displaced persons in their villages, there is evidence of escalating HEC in the region. With the resettlement and opening of agricultural land, the HEC can become a serious issue.

25. The project will issue call for proposals from research organizations, conservation organizations, academia and individual researchers to undertake studies aimed at gathering relevant information. The proposals will be reviewed by the TRC and approved by the MoSDW. These studies will be conducted in collaboration with the DWC and/or FD and funds for external selected groups or individuals will be provided through non-consulting services. Funds under this sub-component will be also be set aside for the collection of data on the elephant distribution, ranging patterns, habitat and land use as well as the development and implementation of a pilot HECOEX in the Northern Province if necessary.

Component 3. Protected Area Management and Institutional Capacity (US$24.2 million)

26. Sri Lanka's PA network is primarily managed by the DWC and FD.[2] Component 3 will support demand-driven interventions in PAs in compliance with the FFPO and FCO that govern the management of various PA categories; strengthening the institutional capacity and investment capability for conservation and management; and providing assistance to develop the long-term financial sustainability for managing the PAs by improving quality of nature-based tourism in PAs. Component 3 includes three sub-components.

Sub-component 3(a). Protected area conservation and management (US$11.6 million)

27. The Government has identified the PA network as priority for investment in conservation and protection, as outlined in *Punarudaya*. The DWC and FD are eligible for receiving funding for activities within their respective PAs. To ensure collaboration and complementarity in the management of adjacent PAs, collaboration between the DWC and FD will be encouraged. Even in instances where individual proposals are submitted by respective PA managers of the DWC and FD for interventions in adjacent PAs belonging to the same ecosystem, activities funded under the project must be complementary. Investment activities identified for funding under this sub-component must be in compliance with the FFPO and the FCO. Activities must also be

[2] Protected Areas are defined for the purpose of the project as land identified and designated for conservation and protection belonging to the Department of Wildlife Conservation and Forest Department.

compatible with the existing PA management plans. Where management plans do not exist yet, the project will support the preparation of management plans before identifying priority activities to be supported. The identification of priority activities within PAs will be led by PA managers because of their local knowledge and experience.

28. Criteria for selection of priority PAs to be supported under the sub-component have been agreed, as follows: PAs must be: (a) areas of high biodiversity significance; (b) threatened ecosystems; (c) locations with observed high presence of endemic species as well as flagship species; (d) locations with potential for non-consumptive ecosystem services; (e) PAs at risk of surrounding development pressures; (f) with high nature based tourism potential and requiring intensive management; and (g) PAs with priorities identified in the Biodiversity Conservation Action Plan, the PA Gap Analysis and other environmental plans for addressing issues faced by PAs. The DWC and FD will be required to prepare proposals for each PA that justify the above criteria, as well as justify the proposed solutions particularly for those activities that changes the existing habitat status, activities for species recovery and rehabilitation.

29. Typical activities to be funded include: (a) rehabilitation and development of water resources within PAs for wildlife; (b) habitat management including control of invasive species, habitat creation and habitat enrichment; (c) rehabilitation of the road network within PAs for reducing tourism pressures and patrolling; (d) improvements to park infrastructure for better management of forest and wildlife resources; (e) species monitoring and recovery programs; (f) wildlife rehabilitation/transit sites and related activities; (g) protection of inviolate areas for species conservation; (h) implementation of real time field based monitoring systems; (i) strengthening enforcement through the introduction of SMART patrolling; and (j) improving mobility of PA staff for better management and enforcement. Infrastructure with significant adverse environmental consequences will not be supported. Any activity supported within PA systems will be required to undertake an environmental screening, followed by an environmental assessment and/or preparation of EMPs to mitigate any adverse impacts as required by the EAMF for the project.

30. This sub-component also aims to reward innovation, performance and accountability in PA conservation and management. A review of performance of this component will be carried out prior to mid-term of the project, and depending on the utilization of the resources, funds may be reallocated to the better performing agency and PAs. This is expected to improve efficiency and promote more cost-effective and relevant interventions.[3] In view of the lessons from experience elsewhere, funding will be based strictly on verifiable and quantitative performance targets to assure transparency and PA management effectiveness. Conservation and management activities of terrestrial, marine and wetland PAs in the country are eligible for funding under this sub-component. Funds will be disbursed only to the DWC and FD under this sub-component.

Sub-component 3(b). Nature-based tourism in PAs (US$6 million)

[3] Such incentive-based approaches to conservation are being more widely used across the world (see, e.g., A. Arendodo "Green Auctions", *Ecological Economics* (forthcoming), E Bulte and R Damania "Modeling the Economics of Interdependent Species", *Natural Resource Modeling*, 2002, 16 pp 21-33; T. Cason and R Gangadharan, "A Laboratory Based Test of Conservation Auctions" *Journal of Environmental Economics and Management*, 2004, 46, pp 446-57.

31. Sri Lanka is well placed to boost revenues from nature-based tourism using its renowned natural beauty and biodiversity. The scope for diversifying into alternative tourist products that cater to travelers with interest in the natural environment is significant. The proximity of national parks to cultural attractions and beaches presents opportunities for tapping a more lucrative segment of the tourist market attracted by the combination of "nature, culture and beaches." Unlike its regional competitors, Sri Lanka has a uniquely high density of natural and cultural assets, including the renowned "cultural triangle" and a rich array of celebrated species such as elephants, leopards and sloth bears. Sri Lanka is ranked among the best places in the world for leopard watching, the best location for viewing large herds of Asian elephants, and a destination for whale watchers. Moreover, nature-based tourism could significantly contribute to conservation and management of PAs by providing sustainable revenues, environmental education etc. Observability of wildlife in Sri Lankan PAs is considered better than most countries outside Africa.

32. Sri Lanka is however unable to reach its potential in nature based tourism due to inadequate tourism facilities in PAs and poor visitor experiences. While PAs have attracted a sizeable number of domestic visitors, international tourist visitation has been only around 30 percent, which is low as compared to other countries in the region. This is largely due to the limited facilities and services for visitors to PAs and the poor quality of interpretation services. According to a recent World Bank contingent valuation survey, visitors rank wildlife viewing highly but are dissatisfied with every other aspect of the tourism experience (facilities, interpretation, guides, crowding, etc.).[4] Without service improvements, there is little scope to extract further fees from visitors. With enhanced services, the willingness to pay rises dramatically (by about 30 percent on average with basic improvements).

33. This sub-component aims at enhancing the quality of nature-based tourism opportunities in priority PAs under the jurisdiction of the DWC and FD, including marine PAs. The development of nature-based tourism, if appropriately managed, provides opportunities for the local populations to benefit from ecosystems conservation, thereby promoting a culture of environmental protection and stewardship. By providing first-hand knowledge, communities can serve as tourism operators, guides, interpreters, retailers or service providers. Skills enhancement is an imperative element of priority PA development plans to bolster local capacity in nature-based tourism.

34. The sub-component will fund the investments needed for nature-based tourism and visitor services for PAs that have been identified as potential sites based on carrying out needs assessments.[5] The investments will be based on a strategic view of the range of nature-based tourism opportunities available and the mechanisms for developing them in an optimal way, without exceeding the carrying capacity of PAs.[6] Some PAs are experiencing over-visitation already and this is detrimental to the ecosystem. In PAs such as Yala National Park, Minneriya

[4] Nature-Based Tourism and the Human Elephant Conflict in Sri Lanka, World Bank, 2010.

[5] Areas for assistance may include: (i) identifying nature-based tourism needs within the PA network; (ii) prioritizing, enhancing and developing nature-based tourism opportunities of current and potential new attractions; (iii) piloting benefit sharing mechanisms with communities as identified in the 2010 World Bank policy note; and (iv) training and capacity building of tour guides and other relevant staff.

[6] Ecotourism and the Department of Wildlife Conservation in Sri Lanka, Phil Dearden, Protected Area Management and Wildlife Conservation Project, Asian Development Bank, TA No. 3273-SRI, April 2000.

National Park, Horton Plains National Park, Uda Walawe National Park and Sinharaja World Heritage Site, where visitation may be near to or exceeding the carrying capacity, the sub-component will support studies to establish the optimum number of visitors based on carrying capacity limits or alternative means to manage the visitation. In the cases where over-visitation is identified and considered detrimental to the long term sustainability of fauna and flora in the PA, the project will assist the DWC and FD in implementing programs for ensuring visitation within the carrying capacity of the PAs.

35. The sub-component will not support major infrastructure that will have significant adverse environmental consequences within PAs. Activities to be supported in PA will require an environmental screening, followed by EAs and the preparation of EMPs to mitigate any adverse impacts, as required by the EAMF for the project.

36. The sub-component will also support the development of nature-based tourism strategies and plans for the DWC and FD, including marketing strategies and plans. The DWC and FD will closely collaborate with the Sri Lanka Tourism Development Authority to ensure the proposed strategies and plans are incorporated into the overall country tourism strategies. Specific activities to be supported are: (a) preparation of plans for enhancing nature-based tourism in selected PAs; (b) development and renovation of visitor services infrastructure such as construction and renovation of Visitor Centers, comfort facilities; eco-friendly accommodation and camp sites, and infrastructure for new visitor experiences; (c) the construction of nature trails, wayside interpretation points, observation towers, wildlife hides, and canopy walks; (d) development of comprehensive accreditation systems for nature-based tourism services; (e) the development of innovative nature-tourism experience, such as nature walks, night safaris, non-motorized boats for wildlife viewing, kayaking, etc.; and (f) improvement of interpretation services and language skills as well as an accreditation program for both game guards and volunteer guides. The project will also support training and accreditation for drivers along with a program of monitoring compliance and imposing penalties for non-compliance with park rules.

Sub-component 3.3: Institutional capacity and investment capability of DWC and FD (US$6.6 million)

37. This sub-component will support activities to strengthen institutional capacity of the DWC and FD to implement and institutionalize already adopted reform measures. It will assist the DWC and FD to consolidate the gains from the reform process and support any new changes that may be necessary. It will finance capacity and skills improvements to enhance adaptive and effective management of PAs. This will include internal and external training courses, study tours and basic equipment, and short-term, task-oriented international and domestic technical assistance. It will also support the strengthening of capacity at the National Wildlife Research and Training Center and the Sri Lanka Forestry Institute and their affiliated training centers.

38. The long-term sustainability of PA management, biodiversity conservation and environmental management in Sri Lanka depends on the availability of specialized human resources in wildlife, forestry and environmental management. Some field level skills are taught at the National Wildlife Research and Training Center and Sri Lanka Forestry Institute, managed by the DWC and FD, respectively. Upgrading of the technical capacity of the resource persons

and the quality of the training programs, including curriculum revisions, will be addressed by the project. Basic improvements to available infrastructure facilities at the National Wildlife Research and Training Center and significant improvements to the Sri Lanka Forestry Institute and its affiliated facilities will also be supported. The sub-component will also assist the DWC and FD in strengthening their training capabilities and in mainstreaming learning through the implementation of training evaluation procedures. Opportunities for twinning arrangements with international training institutions or well-managed PAs will be explored to get exposure to wildlife conservation and forest resources management. The potential for the National Wildlife Research and Training Center to become a regional research and training institution in collaboration with a regional or international wildlife research and training institution—such as the Wildlife Institute of India or the Smithsonian Conservation Biology Institute—and national universities will be explored under this sub-component. Similarly, Sri Lanka Forestry Institute is planning to collaborate with Forestry Institute in India and other research and development facilities in other parts of the world.

39. The sub-component will also support capacity building for the FD and DWC in community approaches to reducing forest deforestation/ degradation and human-wildlife conflicts. It will assist the FD in further developing and implementing community participation and the DWC to develop methodologies for community engagement in conservation, adopting the FD model. It will also fund monitoring and evaluation of community-related activities.

40. The sub-component will also finance the development of the Marine Unit and setting up of a Forensic Laboratory in the DWC. It will support the development of long-term ecosystem monitoring mechanisms in the DWC and FD. Such monitoring information is needed for the timely identification of threats to the resources, understanding the impacts of threats to the resources and ecosystems, including climate change impacts, and responding with adequate conservation actions. The sub-component will provide technical assistance to develop such mechanisms or update the existing mechanisms, including technology for data and information collection, synthesis and dissemination. The monitoring mechanism will closely collaborate with other databases and mechanisms such as national International Union for Conservation of Nature Red Listing process, mechanisms developed to monitor deforestation and forest degradation and monitoring of the achievement of sustainable development goals. The FD and DWC will be required to submit an annual program of institutional capacity building and training based on the principles outlined above for review by the World Bank prior to the utilization of funds. This sub-component will also monitor the achievement of project results and setting up of the project website and maintenance.

Component 4: Project Management (US$1.0 million)

41. Component 4 will finance the PMU and implementing agencies in project management, project monitoring and evaluation, through the provision of incremental operating funds, consulting services, transportation, equipment and training of administrators covering a range of topics, such as administration, planning, budgeting, fiduciary activities, safeguards and monitoring and reporting on project implementation.

Annex 3: Implementation Arrangements

SRI LANKA: Ecosystem Conservation and Management Project

Project Institutional and Implementation Arrangements

1. **Overall arrangements.** The Ministry of Mahaweli Development and Environment (MOMDE) is the lead ministry overseeing overall project implementation. The MoMDE is the national lead agency in environmental and natural resources management, as mandated by the National Environmental Act and it has experience in managing World Bank financed projects. Project implementation will be under the responsibility of the Forest Department (FD) of the MoMDE and the Department of Wildlife Conservation (DWC) of the Ministry of Sustainable Development and Wildlife (MoSDW). Project implementation will be through FD and DWC and their sub-national level offices. The Sustainable Development Secretariat of the MoSDW, in collaboration with relevant government planning agencies, will lead the strategic landscape planning process. The MoSDW will also take the lead in implementation of the HECOEX activities. Implementation of community-led activities will be through selected and registered CBOs, using community contracting. They will supervised and monitored by the FD and DWC to ensure sustainability and in partnerships with local authorities, non-governmental agencies and/or private sector. The following specific project implementation arrangements have been set up.

2. **Project Steering Committee (PSC).** Overall implementation progress and performance will be reviewed and policy level guidance will be provided by the PSC, jointly chaired by the Secretaries of the MoMDE and MoSDW. The PSC will oversee and provide guidance and direction to ensure and enhance the performance of project activities, safeguards, procurement and financial management and monitoring and evaluation. The PSC will include: Project Director of the PMU; Additional Secretary – Natural Resources Management of the MoMDE; Additional Secretary – Development of the MoSDW, Conservator General of Forests; Director General of Wildlife Conservation, Conservator of Forests – Planning (project focal point of FD); Deputy Director – Planning (project focal point of DWC); Director General, Sustainable Development Secretariat; Director General, National Planning Department; Director General, External Resources Department; Director, MoMDE (project focal point of the MoMDE); Director, Biodiversity Secretariat, MoMDE; Director General Central Environmental Authority; Director General, Department of Agriculture; Director General, Sri Lanka Tourism Development Authority; Head, Department of Zoology, University of Colombo; Head, Department of Forestry and Environment, University of Sri Jayawardenapura; and two environmental civil society organizations. Relevant Provincial Council Secretaries and District/Divisional Secretaries will be invited depending on the need to obtain their views especially on Components 1 and 2. The PSC will meet quarterly and the PMU will provide secretariat support.

3. **Project Management Unit (PMU).** The PMU will be responsible for ensuring effective inter-ministerial coordination between the two lead implementing agencies, the FD and DWC. The PMU's will also ensure operational compliance with project regulations and World Bank polices, as defined in the Financing Agreement, Project Appraisal Document, POM, and applicable government policies. The PMU will be led by a Project Director and will include a team of specialized staff responsible for project management, financial management,

procurement, environmental safeguards, social safeguards, monitoring and evaluation, civil works design review and contract management, as well as support staff such a secretary, fiduciary support staff, office assistant and drivers. The PMU will also recruit specialized consultants necessary for specific technical assistance for overall implementation of activities and M&E of project results. The PMU will liaise closely and also ensure overall coordination of all project entities to ensure necessary data and information are shared and collated for reporting to PSC and the World Bank. The PMU established for Dam Safety and Water Resources Planning Project financed by the Bank will provide interim PMU functions for the project until a dedicated PMU is set up by June 30, 2016.

4. **Technical Review Committee (TRC).** The TRC will be responsible for assessing the technical rigor of activities identified through the planning processes and prioritized for implementation under Components 1 and 2. The TRC will include experts with knowledge on wildlife and forestry research and development, project management, human-elephant conflict and co-existence management, spatial planning, community business development, and social development including citizen engagement. Depending on the area of review it will also include representatives of the Department of National Planning, UNDP GEF Small Grants Program, UN REDD+ Program, and the Community Forestry Program. The TRC will include a minimum of seven committee members. The TRC for matters concerning Component 1 and Sub-component 2(b) will be chaired by the Secretary, MoSDW. The TRC for Sub-component 2(a) will be chaired by an independent expert appointed by the TRC members within the TRC. Selection of TRC members for a review will be conducted in ways that prevent any conflict of interest vis-à-vis project proponents. If a particular proposal presents a conflict of interest, the respective member will have to recuse oneself from the evaluation and approval process for that proposal. Details of TRC operational modalities are provided in the POM.

5. **Citizen engagement.** The project has identified a mechanism to involve communities and their representatives in making decisions and for ensuring greater positive impact. Proactive citizen engagement is expected to yield: (a) wide acceptance of the investments for solutions; (b) increased ability to identify more effective solutions drawing on local knowledge that are practical and effective; (c) improved community knowledge and skills in identifying issues and solving them; (d) empowerment and integration of people from different backgrounds; (e) networks of community members who will ensure project goals are met; (f) opportunity to deal with problems or discuss concerns in time; and (g) increased trust between the communities and government institutions in managing environment and natural resources. For the participatory planning processes under Components 1 and 2, the PMU will design a citizen engagement strategy with the objective to give voice and opportunity to various stakeholders in the planning process. The citizen engagement strategy will also include implementation of citizen's monitoring committees that review and follow up on quality and completion of the community interventions. The citizen engagement strategy will be implemented parallel with the implementation of plans under the Component 1 and 2.

Financial Management, Disbursements and Procurement

Financial Management

6. **FM Capacity Assessment**. The MoMDE has exposure to several donor financed operations implemented under the ministry and is familiar with the procedures and processes of donor financed operations including the World Bank. The FD has experience in the implementation of two foreign donor funded projects with Government of Australia and UNDP, which are currently under implementation. The DWC has last implemented an Asian Development Bank-funded project in 2009. Based on the findings of the FM capacity assessments carried out at the head office level of the FD and DWC and a sample of regional and divisional offices, FM arrangements and risk mitigation measures have been designed, including the following: the PMU will be equipped with dedicated, qualified full-time FM staff, drawing on experienced government staff from other ministries and departments who have prior experience in managing donor financed operations or through recruitment of external FM specialist. FM activities and the majority of payments under the project will be carried out by the PMU. Some FM responsibilities, including payments and reporting, will be handled by the FD and DWC in accordance with their specific responsibilities or will be decentralized to Regional/Assistant Director Office levels and Divisional Office levels respectively to be commensurate with the geographically dispersed implementation arrangements. The share of payments to be handled by the FD and DWC or at sub-national levels will however be small. Existing FM staff at the FD and DWC is deemed adequate to handle such FM aspects. The FM arrangements and responsibilities are detailed in the POM.

7. **FM staffing.** The dedicated Financial Management Specialist hired for the PMU will be the overall key FM contact point of the project. Respective Finance Heads of the FD and DWC will be the key contact points for FM for the components/sub-components implemented by them. The FD and DWC as well as the PMU under the MoMDE will implement their respective FM activities with assigned finance staff. Once the PMU is established, a Financial Management Specialist will be recruited to be involved full time in FM activities of the project. The PMU will be responsible for the preparation of the Interim Unaudited Financial Reports (IUFRs), with the inputs of both the FD and DWC. The PMU will be established by June 30, 2016. In the interim, the FM capacity will be met by existing FM staff of the the Dam Safety and Water Resources Planning Project financed by IDA under the MoMDE.

8. **Budgeting**. The project will be included in the Government's budget with adequate budgetary provisions to the MoMDE. The PMU will have dedicated budget line, required for IDA financing and counterpart financing, for project implementation.

9. **Accounting policies and procedures**. Accounts will be maintained on a cash basis and will comply with the government's Financial Reports and relevant circulars. Project-specific accounting and reporting procedures are described in the FM Section of the POM. It will provide clear direction for all FM related activities of the PMU and other spending units, such as the FD and DWC. The FM sections in the POM complement the existing FRs and circulars and elaborate on the administrative and other procedures.

10. **Information system.** The project will use a customized computer accounting system. The system will have the flexibility to accommodate specific project requirements, such as accounting for project expenditure on a component and subcomponent basis. The project will have the computer system in place and functional within one year into project implementation.

11. **Safeguarding project fixed assets**. The PMU will set up a system of recording, managing and monitoring of project fixed assets. The PMU will maintain an assets register with details and information on all assets purchased by project funds adequately maintained. The PMU will also carry out physical verification of assets on a periodic basis to ensure that the assets purchased by project finances are safeguarded and traceable.

12. **Internal controls**. The PMU, FD and DWC will follow the central government's circulars, which address all aspects of procedures and controls necessary for authorizing, approving, executing, recording, and reporting expenditure. These procedures/controls are considered to be adequate. Any additional internal control procedures relating to the project are specified in the FM Section of the POM.

13. **Internal audit**. Internal audit of the project will be outsourced to a firm of chartered accountants to address capacity constraints in the internal audit units of the MoMDE, FD and DWC. The project will be subjected to a continuous internal audit. Internal audit reports will be shared with IDA on a quarterly basis along with the responses of the PMU, FD and DWC, as appropriate.

14. **Fund Flow Arrangements**. A Designated Account, on terms and conditions acceptable to IDA, will be set up at the PMU for the management of IDA funds and maintained in US$ at the Central Bank of Sri Lanka. The MoMDE will have a dedicated budget line to enable the PMU to utilize IDA and government funds. The Designated Account will be opened after establishment of the PMU of the project. The PMU will open a Rupee Account (LKR Account) in a state commercial bank. Funds from the DA will be transferred to the LKR Account on a monthly basis for the day-to-day operations based on the financial statements to be submitted by the PMU to the Treasury through the MoMDE. The PMU will ensure that there will not be excess funds in the LKR Account to minimize foreign exchange losses. In case of large payments, IDA will make direct payments to suppliers. Direct payments to suppliers can be made on the basis of instructions and documentation provided by the PMU copied to the Treasury.

15. FD, DWC and their Divisional Forest Offices or Assistant Directors' Offices, as relevant, will have separate LKR accounts maintained for project activities. The PMU will transfer funds to their LKR account on "imprest basis". In instances where finances are required to go down to lower levels, due to GoSL regulations, funds need to go through the head office, regional office and then to district offices of the FD. In the case of the DWC, the funds need to go through the head office, and the Assistant Director's offices. However, for the Bank finances, it has been agreed with the respective implementing agencies that levels of funds flow will be minimized and fund transfers will not be delayed to ensure timely implementation of activities. Any foreign exchange loss that may arise during project implementation will have to be borne by the GoSL.

16. Some activities are envisaged to be carried out at the field level through community participation. Under component 2(a) such activities will be carried out by involving CBOs. These will be carried out by way of contractual agreements between the PMU and CBO, whereby the CBO would be a service provider and will be paid in the form of a contract, as per terms and conditions laid out in the contractual document. Under sub-components 3(a) and 3(b),

some activities will involve communities through labor contributions whereby individual payments to personal bank accounts are envisaged. A FM assessments relating to a sample of field offices (park warden office and range forest office) were carried out. There is a circular that specifies arrangements laid out in the GoSL to handle such nature of payments and necessary controls. To mitigate the risks of handling cash payments to laborers/ communities, the Bank has introduced additional measures that include payments only to beneficiary bank accounts. These additional measures are described in the POM. Bank financed activities will all be paid through checks that will get deposited into beneficiary accounts and cash payments will not be practiced.

17. Only payments incurred at the end user point will be recognized as expenditure for Bank reporting and documentation purposes. Accordingly, all implementing agencies will report back on a regular basis to the PMU on actual expenditure incurred at each agency level and advances released to the implementing units will not be treated as expenditure.

18. **Financial Reporting**. For replenishment of the DA, the PMU will submit a consolidated Interim Unaudited Financial Report (IUFRs) on a quarterly basis along with the relevant withdrawal applications (WA) to IDA. All supporting documents to prepare the IUFRs will be submitted by both the FD and DWC to the PMU. IUFRs should be submitted within 45 days after the end of each quarter. The PMU will also submit monthly project financial statements to the Treasury and MoMDE. For the replenishment of the respective LKR account, the PMU will submit expenditure statements and relevant documents on a monthly basis to Central Bank through the Treasury. Details are described in the POM. The formats of IUFRs, designed in accordance with the guidelines issued by IDA, has been agreed with the government.

19. The Secretary of the MoMDE will be held accountable overall to IDA for the appropriate and diligent use of project finances. The Project Director of the PMU, in turn, will be answerable to the Secretary of the MoMDE for the use of project funds.

20. **External Audit**. The audit of the project will be carried out annually by the Auditor General of Sri Lanka. The Auditor General is the supreme audit institution of Sri Lanka and has been accepted by IDA. The audit report on the project's annual financial statements will be submitted to IDA by the PMU. The audit reports will be due within six months from the end of the financial year, i.e. on June 30 (Table 3.1).

21. **Audit Reports**. The following audit reports will be monitored in IDA's Portfolio Risk Management System (PRIMA).

Table 3.1 Audit Reports

Implementing Agency	Audit Report	Auditor	Date
PMU under the MoMDE	Project Annual Financial Statements	Auditor General	June 30

22. **Financial Covenants**. The following financial covenants have been identified that are required to be fulfilled by the project:

a) Audited annual financial statements to be submitted to IDA no later than six months of the following fiscal year.
b) IUFRs to be submitted to IDA no later than 45 days following the end of the reporting quarter.

23. **Disbursement Categories**. IDA will finance 100 percent of eligible expenditures, including taxes, duties for goods, works, non-consulting services, consulting services, training and workshops, incremental operating costs of the project. The proceeds of the IDA credit will be disbursed against eligible expenditures in the following categories:

Table 3.2 Disbursement Categories

Category	Amount of Financing Allocated (in US$ Million)	Percentage of Expenditures to be Financed (including taxes & duties)
(1) Goods, works, non-consulting services, consultants' services, and Training under Parts 1, 2 and 3 of the project	44.0	100%
(2) Goods, non-consulting services, consultants' services, and Incremental Operating Costs and Training under Part 4 of the project	1.0	100%
Total	45.0	100%

24. **Incremental Operating Costs**. This includes the normal expenditures of the project, such as reasonable costs of goods and services required for the day-to-day implementation of the project including maintenance of vehicles and equipment, fuel, office supplies, utilities, consumables, office rental and maintenance, bank charges, advertising expenses, travel of staff (including per diems, accommodation), and salaries of selected contracted support staff, but excluding salaries and salary top ups of officials of the Recipient's civil service. The GoSL will provide budgetary allocation for the counterpart funding under the project to finance salaries of the GoSL staff, as required.

25. **FM Implementation Support Plan**. The proposed project has a "Substantial" FM risk rating. Consistent with the risk-based approach to supervision, a substantial portion of the supervision activities will consist of desk reviews of internal and external audit reports including verifying the adequacy of the resolution of major audit observations, reviewing quarterly financial reports, fixed assets physical verification reports supplemented by dialogue with the project staff as needed, especially in the initial years. The supervision activities will include a FM supervision mission at least once every six months. As and when required, other FM supervision tools and resources such as transaction reviews, site visits, field visits, and joint reviews with procurement will be used in an effort to periodically monitor the adequacy of FM systems.

Procurement

26. Procurement for the proposed project will be carried out in accordance with: World Bank's "Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" of January 2011, revised July 2014 (Procurement Guidelines); "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" of January 2011, revised July 2014 (Consultant Guidelines); and the provisions stipulated in the Financing Agreement. "*Guidelines on Preventing and Combating Fraud and Corruption in projects Financed by IBRD Loans and IDA Credits and Grants"* dates October 15, 2006 and updated January 2011, shall also apply to the Project. Unless otherwise agreed with the Bank, the Bank's Standard Bidding Documents, Requests for Proposals, and Forms of Consultant Contract will be used.

27. In case of conflict between the Bank's procurement procedures and any national rules and regulations, the Bank's procurement procedures will take precedence. The general descriptions of various items under different expenditure categories are described below. For each contract to be financed by the Credit, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frames are agreed between the Borrower and the Bank project team and included in the initial Procurement Plan.

28. **Retroactive Financing.** If requested by the Borrower, the IDA may provide retroactive financing under the IDA Credit. Retroactive financing may only be provided when: (a) the activities financed by retroactive financing are related to the Development Objectives and are included in the project description; (b) the payments are for items procured in accordance with the applicable Bank procurement procedures; (c) the total amount of retroactive financing is SDR 815,000 (US$1.125 million equivalent) or less; and (d) the payments are made by the Borrower prior to the date of the Financing Agreement but on or after January 1, 2016 for eligible expenditures.

29. **Procurement of Works.** Works procured under this project shall be procured following International Competitive Bidding and National Competitive Bidding and may involve shopping in some cases. Bank standard documents will be used for International Competitive Bidding contracts. Standard Bidding Documents of the Borrower as agreed with the Bank will be used for National Competitive Bidding contracts. Procurement of such works shall be guided by the provisions applicable to those as laid down in the corresponding paragraphs of Procurement Guidelines as well as the processes detailed out in the POM of the project.

30. **Procurement of Goods.** Goods procured under this project shall be done using Bank's SBDs for all International Competitive Bidding and National Standard Bidding Documents agreed with (or satisfactory to) the Bank for all National Competitive Bidding and Shopping. Small value procurements (up to US$500 or equivalent) may be carried out following Direct Contracting.

31. The following methods will be applicable for procurement of Goods and Works and Non-Consulting Services, consistent with the relevant sections of the Bank's Procurement Guidelines:

- International Competitive Bidding;

- National Competitive Bidding;
- Shopping (Quotations);
- Direct Contracting;
- Force Account; and
- Community Participation.

32. **Requirements under National Competitive Bidding.** In order to ensure economy, efficiency, transparency and broad consistency with the provisions of the Procurement Guidelines, goods, works, and non-consultant services procured under the National Competitive Bidding method shall be subject to the following requirements:

(i) Only the model bidding documents for National Competitive Bidding agreed with the Bank shall be used for bidding;
(ii) Invitations for bids will be advertised in at least one widely circulated national daily newspaper, and bidding documents will be made available at least twenty one (21) days before, and issued up to, the deadline for submission of bids;
(iii) Qualification criteria will be stated in the bidding documents, and if a registration process is required, a foreign firm declared as the lowest evaluated responsive bidder shall be given a reasonable time for registering, without let or hindrance;
(iv) Bids will be opened in public in one location, immediately after the deadline for the submission of bids, as stipulated in the bidding document (the bidding document will indicate the date, time and place of bid opening);
(v) Except in cases of force majeure or exceptional situations beyond the control of the implementing agency, the extension of bid validity will not be allowed;
(vi) Bids will not be rejected merely on the basis of a comparison with an official estimate;
(vii) Except with the prior concurrence of the Bank, there will be no negotiation of price with bidders, even with the lowest evaluated bidder;
(viii) A bidder's bid security will apply only to the specific bid, and a contractor's performance security will apply only to the specific contract under which they are furnished; and
(ix) Bids will not be invited on the basis of percentage premium or discount over the estimated cost, unless agreed with the Bank.

33. **Selection of Consultants.** Major consultancy services to be procured shall follow the World Bank guidelines for selection of consultants and standard documents of the Bank shall be used. Short lists of consultants for services estimated to cost less than US$300,000 or equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. The Bank's Standard Request for Proposal (April 2015) will be used as a base for all procurement of consultancy services under the project. The following methods will be applicable for selection of consultants, consistent with the relevant sections of the Bank's Consultant Guidelines:

- Quality- and Cost- Based Selection;
- Quality-Based Selection;
- Least Cost Selection;
- Fixed Budget Selection;

- Selection based on Consultants' Qualifications: for services estimated to cost less than US$300,000 equivalent per contract, in accordance with the provisions of paragraph 3.7 of the Consultant Guidelines;
- Single-Source Selection;
- Selection of Individual Consultants as set forth in paragraphs 5.2 and 5.3 of the "Consultant Guidelines" ; and
- Sole Source Procedures for the Selection of Individual Consultants.

34. **Thresholds for Procurement Methods and Prior Review**. Review thresholds and requirements for different methods of procurement of works, goods, non-consulting services and selection of Consultants based on the current procurement risk rating are listed in the table below.

35. These thresholds and review requirements may be modified on the basis of reassessed risk ratings during project implementation in agreement with the Bank.

Table 3.3 Thresholds for procurement methods and prior review

Expenditure Category	**Contract Value (Threshold)**	**Procurement Method**	**Contracts/Processes Subject to Prior Review**
Works	≥US$7,500,000	International Competitive Bidding	All contracts
	<US$7,500,000	National Competitive Bidding	First contract awarded by each implementing agency. All other contracts subject to post review.
	≤US$50,000	Shopping	All contracts subject to post review
	≤US$50,000	Community participation	All contracts subject to post review
	≤US$50,000	Force account	All other contracts subject to post review.
Goods and Non-Consulting Services	≥US$1,000,000	International Competitive Bidding	All contracts
	<US$1,000,000	National Competitive Bidding	First contract awarded by each implementing agency. All other contracts subject to post review.
	≤US$50,000	Shopping	All contracts subject to post review
		Direct Contracting	All contracts costing more than US$50,000
Consultant Services (firms)	≥US$300,000	All competitive methods; advertise internationally	All contracts
	<US$300,000	All competitive	All contracts over US$200,000

Expenditure Category	Contract Value (Threshold)	Procurement Method	Contracts/Processes Subject to Prior Review
		methods; advertise locally	equivalent.
	<US$300,000	Consultants' Qualifications	All contracts costing more than US$200,000 equivalent.
		Single-Source Selection	All contracts costing more than US$50,000 equivalent.
Individual Consultants		Individual Consultants (Section V of Consultant Guidelines)	All contracts over US$100,000
		Individual Consultants - Sole source	All contracts costing more than US$50,000 equivalent.

36. **Post Review**. Contracts below the prior review threshold for goods, works and consultancy services will be subject to post review, as per the procedure set forth in paragraph 4 of Appendix 1 of the Bank's Procurement and Consultant Guidelines. The Borrower shall retain complete documentation for each contract and make it available to the Bank or its nominated consultant for carrying out the post review. In accordance with the applicable risk rating a percentage of sample of contracts that have not been prior reviewed will be post reviewed.

37. **Assessment of Procurement Capacity**. The procurement unit will comprise one senior procurement officer, one junior procurement officer and two assistants. And also two officials from each Department, FD and DWC as the focal persons for procurement. Additional procurement support may be needed when the project becomes fully functional. A dedicated procurement officer will be assigned to carry out the project procurement functions under the supervision of the procurement specialist of Dam Safety and Water Resources Planning Project during interim period until the project-specific PMU is established.

38. The main procurement risks identified by the assessment are:

- Absence of a systematic procurement performance and compliance monitoring mechanism at country level;
- Lack of experience in dealing with complaints, and fraud and corruption issues and
- Lack of established system of public disclosure of information on procurement actions.

39. Risk mitigation measures which have been agreed are:

(a) A procurement team headed, by an experienced procurement officer and supported by one junior procurement officer and two assistants specifically for the project. Further two officials from each Department, the FD and DWC as the focal persons for procurement;
(b) Procurement staff will be imparted training, on procurement;

(c) The POM includes procurement procedures to be followed for smaller value contracts at regional level together with standard/model documents, formats and templates to be used, as agreed with the Bank;
(d) The PMU will prepare and forward to the Bank an annual procurement progress report, which will include, inter alia, procurement plan updates and post review reports;
(e) The PMU will implement a proper monitoring mechanism for procurement;
(f) The following key indicators will be used for assessing procurement performance and procurement risk rating:
    (i) Percentage of procurement activities which have more than 15 percent delay in bid/proposal evaluation;
    (ii) Percentage of contracts which have been extended and/or have more than 15 percent modifications by value;
    (iii) Percentage of contracts with completion period extended by 10 percent of the original contract period; and
    (iv) Percentage of procurement activities which had complaints.
(g) Corrective actions will be to address deficiencies identified by the Bank post reviews.

40. The overall project procurement risk is rated substantial. It will be downgraded once the remedial measures listed above are in place.

41. ***Disclosure.*** The following documents will be disclosed on the Borrower's Website:
(i) procurement plan and updates;
(ii) invitation for bids for goods and works for all International Competitive Bidding and National Competitive Bidding contracts;
(iii) request for expression of interest for selection/hiring of consulting services;
(iv) contract awards of goods and works procured following International Competitive Bidding/National Competitive Bidding procedures;
(v) list of contracts/purchase orders placed following shopping procedure (on a quarterly basis);
(vi) shortlists of consultants;
(vii) contract awards for all consultancy services;
(viii) list of contracts under Direct Contracting or Consultants'' Qualifications or Single Source Selection (on a quarterly basis); and
(ix) Action taken report on complaints received (on a quarterly basis).

42. The following details shall be published in the Bank's external website and United Nations
Development Business (UNDB):
(a) Invitation for bids for procurement of goods and works using International Competitive Bidding procedures,
(b) Request for expression of interest for consulting services with estimated cost more than US$300,000,
(c) Contract award details of all procurement of goods and works using International Competitive Bidding procedure,

(d) Contract award details of all consultancy services with estimated cost more than US$300,000, and
(e) List of contracts/purchase orders placed following Direct Contracting or Consultants'' Qualifications or Single Source Selection procedures on a quarterly basis.

43. **Complaint Handling.** A complaint handling mechanism for the project has been described in the GRM under sub-section social safeguards below. Once the GRM is in place, it will be published on the Borrower's website. On receipt of complaints, immediate action will be initiated to acknowledge the complaint and redress in reasonable time frame. All fiduciary complaints received will be forwarded to the Bank for information and the Bank will be kept informed after the complaints are redressed.

44. **Procurement Plan.** The initial procurement plan for the first 18 months of project implementation, acceptable to the Bank, has been prepared by the PMU. This plan has been agreed between the PMU and the Bank and will be made available at the PMU website, and in the Bank's external website. The Procurement Plan will be updated annually or when required to reflect project implementation needs and improvements in institutional capacity.

45. A web based procurement monitoring tool, will be rolled out during the first six months of the project implementation.

46. **Frequency of Procurement Supervision.** In addition to the prior review of high value contracts, supervision to be carried out by the Bank.

47. **Capacity Building.** Project staff will be given adequate procurement training through a comprehensive capacity building program in country and overseas. Junior staff will be trained on-the-job. Bank procurement staff will assist in rolling out the capacity building program. The key procurement staff of the PMU and the implementing agencies will be trained on procurement procedures pertaining to Bank Financed projects in general and specific to the project in particular. Workshops will be conducted for Procurement Staff and other key staff of the PMU and all the implementing agencies to align them with the Bank's procurement procedures as well as to introduce methods for identifying and mitigating risks. The PMU will disseminate and conduct training on POM. In addition, the Bank will facilitate training sessions on Government's procurement policy and procedures as applicable to Bank financed projects as a measure to avoid potential confusion between the government procurement procedures vis-a vis Bank procurement procedures.

Environmental and Social (including safeguards)

Social Safeguards

48. World Bank operational policies on Indigenous Peoples (OP 4.10) and on Involuntary Resettlement (OP 4.12) are applicable.

49. **Indigenous Peoples (OP 4.10)**. Operational Policy (OP) 4.10 is applicable to ensure adequate recognition of risks, needs, and demands of indigenous peoples (IP) in the project areas. The presence of IPs has been determined based on the specific rights identified for the *Vedda* (former forest dwelling) communities. An Indigenous Peoples Planning Framework (IPPF) has been prepared that describes the process to be followed in preparing an Indigenous Peoples Development Plan (IPDP). This will be applicable if the project activities are to be implemented in PAs accessed by *Vedda* communities or in the surrounding landscape where *Vedda* are present.

50. **Involuntary Resettlement (OP 4.12)**. No involuntary resettlement and land acquisition is expected to take place in the project. Some of the ecosystem conservation and management activities, particularly landscape planning and HECOEX activities involving slash and burning agriculture areas, are likely to affect existing land use patterns and livelihood activities of some communities in the project area and may include access restrictions to natural resources.

51. The majority of project affected people in the project areas are Sinhalese Buddhists. Livelihood patterns in different locations and peoples' dependence on forest land do vary. Those who live around the biodiversity rich wet zone landscapes are generally engaged in paddy cultivation, highland agriculture and small tea holdings. They depend on forest land in limited ways for tapping palm, collecting firewood, food and medicinal plants. Communities in the dry and arid zone conservation landscapes are largely engaged in *chena* cultivation. The majority of *chena* farming is undertaken in FD-owned land and is an illegal activity. Since the *chenas* and national parks exist in close proximity to each other, the HEC is particularly acute in such areas. Additionally, *chena* cultivating communities are also dependent on forests for collection of forest produce. The *chena* lands are optimal elephant habitats and the *chena* cultivators try to prevent elephants from grazing on their crops by firing gunshots, burning chili peppers, digging trenches, and erecting electric fences.

52. Since *chena* farmers are also providing significant conservation services by creating elephant habitat through shifting cultivation (specifically during the non-cultivation period), Government will allow multiple use forests and other state forests (not conservation forests) for managed *chena* cultivation. Communities involved in *chena* cultivation are not expected to be deprived of their livelihoods and project impacts are expected to be minimal. To ensure there are no adverse impacts on livelihoods, the project's Process Framework for Access Restrictions applies.

53. There are two PAs that have indigenous communities living in their periphery. These and their rights have been identified in the regulations of the FFPO. The project will not have adverse impacts on these communities. Project activities will not impose access restrictions to enter PAs nor will the project affect their livelihood adversely. The IPPF will help ensure that the indigenous people benefit from the project if these PAs are shortlisted for investment. Special measures will be taken in order to ensure that due consideration is given to safeguard the cultural identity and way of life of these communities, mitigate negative impacts and ensure involvement in project planning and implementation. This will require specific SIAs and the development of an IPDP if project activities are implemented in and around these sites. A CBO or community NGO may be contracted to closely engage with the IP community.

54. **Management of social safeguards.** A SMF has been prepared because the details of the sites and specific activities and interventions are not available until project implementation. The SMF includes an assessment of generic issues that may arise during implementation, including measures for social risk mitigation and institutional arrangements for conducting SIAs, implementation and monitoring. All relevant activities financed under the project, in general, and Component 2, in particular, will be subject to specific SIAs and the subsequent preparation of social mitigation measures for each intervention. The project will not fund any relevant physical activity if a prior SIA has not been completed. The SMF will serve as a guide to the level of social analysis and mitigation required for all interventions supported by the project which may have the potential to trigger negative social impacts. The SMF will ensure the project's compliance with the World Bank's social safeguard policies during implementation.

55. **Public consultation and disclosure**. Involving community members in the development and implementation of project interventions will help minimize potentially negative impacts on the community. Stakeholder consultations with representatives from the communities, such as *Grama Niladaris*, school principals and teachers, *Samurdhi* officers and other village level government officials will be conducted at the development stage of an intervention under Components 1 and 2. Opinion surveys, focus group discussions and semi-structured interviews with selected community members who represent both genders, age groups, ethnicities and religious groups can be useful, particularly before the implementation of a particular activity. An independent group will be assigned the task of conducting the stakeholder consultations. Consultations with project-affected groups, CBOs and other stakeholders on the project's social impacts will be conducted and stakeholder views will be reflected in the implementation of activities. Consultations have already commenced in the FD's Knuckles Range and the DWC's Bundala National Park adjacent communities in November 2015. Close consultations with the key stakeholders, especially at the local level, will be an integral part of conducting the intervention specific SIAs.

56. The SMF and IPPF have been disclosed to the public on January 28, 2016 within the country and in Infoshop on January 28, 2016. All social safeguard instruments prepared as part of implementation will also be made available for public.

57. **Institutional and implementation arrangements.** The DWC and FD will have primary responsibility for coordinating work related to SIAs and IPDPs. The DWC and FD will have the responsibility to ensure that SIAs are prepared for all sites where negative social impacts can be expected and that suitable mechanisms are mobilized to ensure the implementation of the SIAs.

58. **Grievance redress mechanism (GRM).** A three-tiered grievance redress mechanism will be established for the project starting from local level, followed by the PSC and judiciary. Local level Grievance Redress Committees will be set up and their membership will comprise officers from FD and DWC, *Grama Nilahari* and two other village level government officers, two to three community members to represent the interest of the communities and an independent party (e.g. attorneys). The community members appointed can be leaders of CBOs. The decisions of the local Grievance Redress Committee can be appealed through the PSC. If the

PSC is also unable to resolve any grievances, the complainant can utilize judiciary process supported through the project.

59. Records of all community grievances brought to the attention of the Grievance Redress Committees, the processes of how the Grievance Redress Committees dealt with those grievances, the solutions sought and further appeals made to the PSC will be filed at the PMU, FD and/or DWC for transparency and future reference. A database containing the above information will be established at the PMU and relevant information will be made available for public.

60. **Institutional capacity for safeguard management.** The existing knowledge within the DWC and FD to conduct and review SIAs is moderate and there is a need to train designated officers in the DWC and FD to ensure that SIAs are conducted and regular social monitoring is carried out. The project will also explore the possibility of enlisting the services of consultants to assist in the conduct of SIAs (if needed) and of third party monitors, such as local CBOs, to assist in independent monitoring in critical sites and to provide feedback.

61. **M&E.** Monitoring of social issues will be required as part of overall project monitoring. Monitoring of compliance with SMF specifications by the contractor or project proponent is essential for proper social management and will primarily be conducted by the implementing agency or by a social committee appointed for each site which requires regular monitoring. A broader SIA will be done for the overall project prior to mid-term review and project closure to provide an independent assessment of the wider social impacts of the project interventions, implementation of the safeguards framework, functioning of local GRMs, impact on land tenure in the project areas and of development of local entrepreneurship and investments.

Environmental safeguards

62. **Environmental Assessment (OP 4.01)**. The project is classified as Environmental Category B. The project is expected to generate positive environmental impacts. Some project activities may involve small-scale civil works. The associated negative impacts are expected to be largely on-site and easily mitigated with proper planning and sound environmental practices.

63. The environmental impacts of project interventions may include temporary disturbance to habitats and wildlife populations due to: the use of machinery and earth works; noise and air pollution due to frequent movement of vehicles; burning of uprooted vegetation; spread of invasive species from vehicles and material brought into the national park from outside; and disposal of silt/soil and other construction debris. Other risks include the possibility of increased wildlife poaching during construction work and the attraction of domestic cattle herds to newly developed water resources. Caution has to be practiced in terms of managing invasive species to ensure that degradation does not worsen. Sri Lanka has many examples of destructive invasion of aquatic weeds in waterways as well as terrestrial species in dry coastal areas which includes several PAs. The removal of invasive species in the southern coastal belt was funded under the Asian Development Bank-supported Protected Area and Wildlife Conservation Project. Lessons from this project will be incorporated into this project. Strategies for invasive species management based on international guidance has been included in the EMF. Solid waste/debris

disposal from worker camps may need to be handled. Activities that will involve earth movement and construction will result in the displacement of top soil and generation of wastes. No worker camps will be set up within the PA network as is prohibited under existing legislation. No significant or irreversible damage is likely to occur in implementing HEC mitigation activities.

64. The project will also support enhancing the quality of nature-based tourism in PAs which will require the development of necessary tourism facilities such as visitor centers, toilets, rest areas, park bungalows, picnic sites, camp sites, nature trails, viewing platforms or hides, facilities for kayaking or canoeing etc. Nature-based tourism within PAs will be developed according to strategic plans that will consider carrying capacities and environmental sensitivities. Potentially negative impacts may include: changes to land form; decrease in aesthetic value; disturbance to animal life and habitats. Some of these impacts will be temporary in nature and mostly localized and will be mitigated and managed. Control of visitation will be a significant benefit to the conservation of biodiversity in the PAs.

65. **Forests (OP 4.36) and Natural Habitats (OP 4.04)** are applicable under the project. Although no adverse impacts on the quality or health of forests or any degradation of natural habitats are expected to be caused by the project, these operational policies will apply to encourage the DWC and FD to exercise maximum due diligence in carrying out project activities in PAs and other sensitive ecosystems.

66. **Physical Cultural Resources (OP 4.11)** is applicable because the landscapes considered and some of the potential PAs that will be supported may have historical or cultural significant sites.

67. **Pest Management (OP 4.09)** is applicable. Although the project will not finance purchase, transportation or storage of pesticides, it will encourage the use of Integrated Pest Management practices in relevant livelihood support activities under the Component 2.

68. An Environment Assessment and Management Framework (EAMF) has been prepared. The EAMF provides guidance for environmental screening and analysis required for all interventions supported by the project that have the potential to trigger negative environmental impacts. The EAMF includes: (a) an assessment of generic issues typically associated with the type of intervention anticipated under the project; (b) measures for environmental risk mitigation; and (c) institutional arrangements and capacity building needs for conducting environmental assessments (EAs), preparing environmental management plans (EMPs), implementing and monitoring. The project will not fund any physical activity with significant negative impacts without prior environmental screening, analysis and submission of an acceptable environmental management plan. All EAs or EMPs will be reviewed and cleared by the Bank prior to fund disbursements. The EAMF also includes specific provisions to: (a) assess the potential impacts on sites considered to have historical or cultural significance prior to any activities being undertaken on the ground, and (b) for the management of physical cultural resources that may be discovered during project implementation (chance finds). The EAMF also includes screening procedures for pest management and pesticide use for activities considered under Component 2 that may involve agriculture activities. During project implementation, the

relevant environmental safeguard documents will be disclosed to the public.

69. **Public consultation and disclosure.** Consultations with communities living adjacent to in Knuckles Range and Bundala National Park have been undertaken during project preparation. Consultations will continue throughout the project cycle. An e-discussion site is available for the conservation community to discuss and comment on the project. Engagement and consultations with local civil society groups and the indigenous community will continue throughout implementation. Consultations with key stakeholders, especially at the local level, will be conducted on environmental aspects related to site-specific EAs and/or EMP preparation where applicable.

70. The EAMF has been disclosed to the public on January 28, 2016 within the country and in Infoshop on January 28, 2016. Similarly, public disclosure arrangements for future safeguards-related documents are envisaged and will be placed in the web sites of the implementing agencies as well as locally at the site level.

71. **Institutional and implementation arrangements.** The GoSL environmental clearance process is consistent with World Bank environmental and public disclosure requirements. One exception relates to the screening criteria adopted by the GoSL under the National Environmental Act that provides for thresholds to determine the type of clearance required and the content of public consultation. According to the Act, any activity within 100 meters from the boundary or within any area declared under the National Wilderness Heritage Act, FCO, and FFPO require an Initial Environmental Examination or an Environmental Impact Assessment and approval from the relevant authority irrespective of project thresholds. Similarly, the Coast Conservation Act reserves the right to determine the need for an Initial Environmental Examination or an Environmental Impact Assessment for activities carried out in its area of jurisdiction that does not fall within the purview of the three aforementioned acts.

72. Most of the project interventions will fall within the sensitive zones specified by these acts and will require local environmental clearance and approvals. All project activities with potential environmental impacts will be subject to environmental screening or environmental analysis and the preparation of an EMP regardless of the threshold. Where applicable, The Bank will rely on local regulations and approval processes for carrying out necessary EAs. In addition to the GoSL's clearance procedures, the Bank will review all EAs and EMPs. EMP provisions will be included in civil works contract documents with financial penalty clauses instituted for non-implementation or non-compliance. The primary responsibility for coordinating the work related to EAMF and its requirements will rest with the DWC and FD, which will recruit dedicated staff for these purposes and additional external expertise, as needed.

73. **M&E.** Environmental issues and compliance with EMPs will be monitored as part of overall sub-project monitoring under the responsibility of the implementing agencies or by an appointed environmental committee. Regular IDA missions will include specialists to monitor the project's compliance with safeguard policies.

Monitoring & Evaluation

74. The project M&E will serve to (i) monitor and report on implementation progress; (ii) identify gaps that require corrective actions; and (iii) assess and report on project results. This project M&E system consists of (i) results monitoring through the project's results framework; (ii) input and outputs monitoring using detailed cost planning, procurement plan and IUFRs to ensure project funds are used for intended purposes; and (iii) assessing the safeguard performance and compliance and citizen engagement. The project will prepare quarterly monitoring reports that capture the progress of implementation and contract compliance and annual M&E report on the results framework for the PSC and Bank review.

75. *Institutional arrangements.* Overall responsibility for project M&E will rest with the PMU. The PMU will recruit an M&E Specialist to lead to M&E responsibilities define for the project. Services of consultants and other third parties such as NGOs will be utilized to undertake independent surveys and assessments. The DWC's and FD's capacity will be also developed to carry out wildlife and forest resources monitoring on the long-term under the sub-component 3(c). A monitoring matrix to track inputs, outputs and outcomes, with intermediate and key performance indicators has been developed for the project and included in the POM. Outcomes and outputs will be monitored during project implementation using data compiled by the PMU and generated by the project as well as other sources as described in Annex 1 to evaluate the project progress. The project M&E Specialist will keep track of agreed indicators on a regular basis as specified in the monitoring matrix. Information, data and reports will be also provided by the implementing agencies and verified through independent assessments and surveys. Each agency will also conduct its own self-monitoring to ensure the proposed activities are within agreed targets. Collection of monthly monitoring information will be the responsibility of the respective primary agency implementing the activities, which will be consolidated by the PMU. The PMU will prepare quarterly M&E reports that will be submitted to PSC to enable discussions on project performance and fulfillment of benchmarks and milestones and to propose and adopt adjustments to the project design to facilitate the achievement of the PDO. The PMU will collate data on key indicators annually and will feed such data into the M&E system for public disclosure. The data for M&E system will also consists of financial, procurement and physical progress report, environmental and social safeguard compliance, along with financial audit reports. The issues to be reviewed by the PSC on M&E will include the efficacy, efficiency, sustainability, acceptance by the stakeholders of project actions.

76. *Data collection.* The project will develop an integrated user-friendly M&E system to collect data that will measure the impact of the project activities as described above as well as other complementary interventions funded by other sources. The M&E data will include financial, procurement, physical progress against activities and specific targets as per the results framework and environmental and social safeguards compliance. Initially, the system will focus on key areas invested by the project. The project will also collect gender disaggregated data to assess the beneficiaries and citizen engagement process.

77. *Capacity.* Overall monitoring capacity of all government institutions involved in the project is weak. This is mainly due to lack of financial and human resources. Therefore, the project will recruit an M&E specialist to manage the M&E system of the project, as well as to provide capacity building to the implementing agencies. The annual monitoring of project's key results will be out sourced to a competent consultant.

78. Currently, there is no centralized system or defined methodology to monitor the management effectiveness of PAs, status of biodiversity and ecosystem health and related socio-economic conditions and changes. The project will build a monitoring system with data from government agencies, academies and civil societies that carry out site-specific interventions for ecosystem conservation and management. Such a system is considered timely for generating key information for decision-makers, particularly at a time where rapid economic development is threatening the existence of globally and nationally significant biodiversity and key ecosystems in the country.

79. *Semiannual supervision, mid-term and terminal impact evaluations:* The World Bank will conduct semi-annual supervision missions to assess progress made in the implementation of the project activities and to guide the project team. However, since a majority of the task team is based in Sri Lanka, on-going implementation support will be provided to the project. In addition, the World Bank, together with external reviewers, project team and key stakeholders, will conduct a mid-term impact evaluation of project execution in year 3 of implementation and a terminal impact evaluation prior to project closure. The mid-term impact evaluation will focus on: (i) progress in achieving project outcomes and changes necessary to achieve the final outcomes of the project within the project period; (ii) effectiveness of the institutional arrangements for project implementation; and (iii) project's POM and implementation plan. The final impact evaluation will focus on: (i) the achievement of the expected project results; and (ii) best practices and lessons learned vis-à-vis future investments.

Annex 4: Implementation Support Plan

SRI LANKA: Ecosystem Conservation and Management Project

Strategy and Approach for Implementation Support

1. The strategy for project implementation support reflects the nature of the project and its risk profile. The strategy seeks to make implementation support to the client efficient while remaining focused on implementation of the risk mitigation measures identified in the SORT. The strategy is indicative and flexible and will be revisited and adjusted during implementation.

2. Project supervision will support the following areas: (a) fiduciary capacity to promote the establishment of adequate internal control systems and overall governance; (b) implementation of proposals under funding windows, particularly in the context of promoting sustainable biodiversity-friendly practices and their monitoring; (c) mitigation of potential political interference to maintain strong technical capacity, alignment with project objectives, and due diligence; (d) free, prior, and informed consultations with indigenous peoples where impacts may be present to ensure that they receive benefits that are culturally compatible; (e) management of environmental and social factors in PAs and critical natural habitats to contribute to conservation without compromising the wellbeing of the local population; (f) communication campaign to maintain stakeholders informed and engaged; and (g) monitoring of project implementation, including results indicators and biodiversity monitoring.

3. The Bank will: (a) provide implementation support and training as necessary; (b) follow up on the project's financial management system including reporting requirements and adherence to the POM, including but not limited to accounting, reporting and internal controls; (c) provide guidance on the Bank's Procurement Guidelines to the PMU, DWC and FD and other participating agencies; (b) review procurement documents and provide timely feedback to the PMU; and (c) help monitor procurement progress against the Procurement Plan.

4. The Bank will emphasize opportunities for social development and environmental sustainability provided by the project, as well as adequate attention to gender equity particularly during community involvement. Within this framework, the Bank will help to monitor the implementation of activities and of safeguard instruments. Bank social and environmental specialists will be available to provide timely guidance to the PMU, DWC and FD, and will participate in field visits on a regular basis. A Communication Strategy will support the implementation of the project in its different areas of intervention, especially landscape level interventions. The strategy will also seek to support implementation of consultative and accountability processes, including the grievance redress mechanism.

Implementation Support Plan

5. Most of the Bank team members are based in the Sri Lanka Country Office ensuring timely, efficient, and effective support to the client. Formal supervision and field visits will be semiannual, with more frequent technical support missions during the first two years of the project.

6. Technical inputs will be provided to ensure project design elements are adopted, to support the development of proposals and to enable timely capacity building activities. The team's implementation specialist will conduct quarterly review of implementation throughout the life of the project. As soon as the relevant fiduciary staff are identified, training will be provided by the Bank's FM and procurement specialists based in the Country Office. The team will also help the PMU, FD and DWC to identify capacity-building needs in FM and procurement management. Support missions, including procurement and FM reviews, will be semiannual. Procurement and FM support will also be provided to the client as required. An orientation program on safeguard polices and the implications of safeguard instruments will be conducted for key staff that will be involved in project implementation and monitoring. The assigned safeguard specialists are based in Sri Lanka and can provide technical support at any stage of the project.

7. The Bank will monitor compliance with the standards of safeguard instruments during implementation support missions, and technical guidance will be provided accordingly. A staff based in the Country Office will be also assigned to provide day to day supervision of all operational aspects, as well as coordination with the client and among Bank team members. Task team leadership, as well as safeguards, procurement, financial management, and technical aspects will be managed from the Bank's offices in Colombo and with some support from Washington DC and other country offices. Consultants will be hired to provide advisory services in specialized issues. Formal supervision and field visits will be carried out semi-annually or as needed to help promote satisfactory project implementation. These implementation reviews will determine the need for restructuring and other changes in the project design and/or implementation arrangements. A mid-term review will be undertaken within 3 years of approval.

8. The main focus of implementation support is summarized below.

Table A4.1: Staff Level of Effort for Project Implementation Support

Time	**Focus**	**Skills Needed**	**Resource Estimate (annual) in staff weeks**	**Partner Role**
1-12 months	Technical and operational support (project management)	Technical specialist; Operations officer; Conservation planning and financing specialist	15 6 6	Not Applicable
	Establishment of implementation capacity	Engineer; Procurement specialist; Financial management specialist	8 4 4	
	Community development	Community development specialist	6	
	Social safeguards	Social development	4	

		specialist		
	Environmental safeguards	Environmental specialist	4	
	Communication strategy development and communication support	Communication specialist	5	
12-60 months	Technical and operational support & monitoring and evaluation	Technical specialist; Operations officer; Conservation planning and financing specialist; M&E specialist Engineer	12 6 6 4 8	Not Applicable
	Economic valuation	Environmental economist	4	
	Community development	Community development specialist	6	
	Fiduciary implementation support	Procurement specialist Financial management specialist	4 4	
	Social safeguards	Social development specialist	4	
	Environmental safeguards	Environmental specialist	4	
	Communication	Communication	3	

Table A 4.2: Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Task Team Leader (technical specialist)	15 SWs in year 1; 12 SWs in subsequent years	Minimum 4 field trips annually	Country Office based specialist
Conservation planning and financing Specialist	6 SWs annually	Minimum 4 field trips annually	Staff based in Washington DC / Country Office
Engineer	8 SWs annually	Minimum of one visit to all project sites annually	Staff based in Washington DC / Country Office / Consultant based in Sri Lanka
Procurement Specialist	4 SWs annually	Minimum 2 field trips annually	Country Office based specialist
Financial Management Specialist	4 SWs annually	Minimum 2 field trips annually	Country Office based specialist
Social Development Specialist	4 SWs annually	Minimum of 4 field trips annually	Consultant based in Sri Lanka

Environmental Specialist	4 SWs annually	Minimum of 4 field trips annually	Consultant based in Sri Lanka
Community Development Specialist	6 SWs annually	Minimum of 4 field trips annually	Consultant based in Sri Lanka
Operations Officer	6 SWs annually	Minimum of 4 field trips annually	Country Office based specialist
Environmental Economist	4 SWs during year 3 and 5	Minimum of 1 field trip annually	Staff based in Washington DC
Communication Specialist	5 SWs in year 1; 3 SWs in subsequent years	Minimum 2 field trips annually	Country Office based specialist

Annex 5: Economic and Financial Analysis

SRI LANKA: Ecosystem Conservation and Management Project

Introduction

1. The significance of ecosystems is seldom adequately recognized in economic markets, government policies or land management practices. The tendency to underestimate the value of ecosystems is related, for the most part, to their "public good" quality. Ecosystems and the services they provide are owned by all and thus protected by none. They generate shared benefits and so encourage free-riding. Being publicly provided, they are underpriced or un-priced and thus tend to be over-used and improperly used. Since the benefits are shared and ownership is collective, there is a tendency to free-ride on contributions for the provision of these goods. Collectively these features lead to extensive degradation of ecosystems as a consequence of systemic market failures.[7]

2. In acknowledging the challenge of environmental and natural resources degradation, this project aims to enhance the management and sustainable us of ecosystems in selected parts of Sri Lanka through a series of complementary and synergistic components. The analysis focuses on the potential costs and benefits of project's key investments, based on the scientific literature and recent World Bank studies undertaken on investments in natural resources management. By estimating the (partial) values of changes to ecosystem services, various interventions have been compared.[8] [9]

Sri Lanka and ecosystem valuation

3. PAs are the cornerstone and foundation of conservation efforts worldwide. Yet PAs, especially those in the developing world, suffer from extreme shortages in funding as evident in the inadequacy of staff, vehicles, fuel and other resources required for effective management of PAs. It is widely accepted that one of the most significant issues with PA management is a fiscal one.

[7] http://www.esa.org/education_diversity/pdfDocs/ecosystemservices.pdf

[8] Nunes, P.A.L.D. and J.C.J.M. van den Bergh. "Economic Valuation of Biodiversity: Sense or Nonsense?" *Ecological Economics*, 2001, vol. 39, issue 2, pages 203-222

[9] Ecosystem valuation is a difficult and controversial task, and economists have often been criticized for trying to put a "price tag" on nature. However, agencies in charge of protecting and managing natural resources must often make difficult spending decisions that involve tradeoffs in allocating resources. These types of decisions are economic decisions, and thus are based, either explicitly or implicitly, on society's values. Therefore, economic valuation can be useful, by providing a way to justify and set priorities for programs, policies, or actions that protect or restore ecosystems and their services. http://www.ecosystemvaluation.org/1-02.htm

4. Expenditure on PA management in Sri Lanka, with a total land size of 1.7 million hectares (ha) is estimated at LKR478 million or US$4.1 million as of 2008.[10] On a per hectare basis, expenditure on PA management amounts to US$2.30. Excluding foreign aid assistance and contributions on PAs that do not constitute sustainable sources of funding, expenditures are estimated at US$1.3 million in 2007 and US$1.6 million in 2008, resulting in lower per hectare figures of US$0.70 and US$0.90, respectively.

5. The estimated expenditure per hectare of PA in Sri Lanka at the lower end of the range of expenditure values is considered as sufficient for PA management. In the US and South Africa, for example, PA management expenditures stand at US$40 and US$30 per ha, respectively. Table 5.1 provides PA management expenditures for other countries in the region and elsewhere. In general, the countries in the sample spend around US$2-3 per ha, with the exception of Nepal.[11] In addition, studies on Cameroon, Congo Basin, Ghana and Bolivia report average spending in the range of US$0.05 to US$3.00 per ha while actual needs are estimated at US$0.90 to US$9.00 per ha.[12] Investments in conservation in Sri Lanka, like many developing countries, seem well below recommended amounts.[13] The cross-country comparison points to the need for Sri Lanka to increase investments in PA management as proposed in this project.

Table 5.1. Expenditure on Protected Areas in Selected Countries

Country	Expenditure per Hectare (US$)
Nepal	26
Bangladesh	2-3
India	1-3
Bhutan	3-4
Malaysia	2
Thailand	5
Indonesia	1-3.7
Russia	4-5.8

Source: Adapted from World Bank, 2008[14]

[10] WRI, 2009. http://earthtrends.wri.org
[11] This number is significantly higher compared to other countries since it mainly consists of foreign aid assistance
[12] Bruner, A., R.E. Gullison, and A. Balmford. 2004. "Financial Costs and Shortfalls of Managing and Expanding Protected-Area Systems in Developing Countries," BioScience 54: 1119–26.
[13] Bruner, A. *How Much Will Effective Protected Area Systems Cost?* Center for Applied Biodiversity Science, Conservation International, Washington, DC.
[14] *A Future for Wild Tigers,* World Bank, 2008.

Project economic/cost-benefit analysis

7. The proposed Project will produce both tangible and intangible economic benefits. The economic analysis quantifies a subset of the benefits that some of the project activities are envisaged to provide. The benefits of this project are associated mostly with greater sustainability, reduction in HEC, improvements in environmental service flows and capacity to conserve and manage ecosystems. These benefits do not translate into direct and measurable market benefits. However, non-market valuation techniques are labor-intensive and time-consuming and tend to produce imprecise and uncertain results. Hence, the analysis utilized data from ongoing quantification efforts, including two recently concluded World Bank assessments.[15] The economic analysis, specifically in the case of PA conservation and management and management of HEC where large portion of the project investments will be utilized, applied a number of alternative and simpler approaches for inferring project net benefits, i.e., cost effectiveness and benefit breakeven estimates. These approaches aim to quantify the minimum level of benefits for some of the project components/sub-components that will render the project beneficial and justify the related project investments, after appropriate discounting of the benefit and cost flows.

8. **Component 1 and sub-component 2(a)** finances mainstreaming natural resources management into spatial development and livelihoods that are sustainable. Conservation is more likely if the standard of living of the key beneficiaries is improved. This improvement is associated with the incorporation of biodiversity-friendly and climate-smart production/livelihood practices, allowing production increase and diversification as a strategy for access to markets, while favoring conservation of natural resources. The financial returns from mainstreaming natural resources management into spatial development and livelihoods are difficult to measure as investments are difficult to predict given its demand-driven nature, diversified livelihood and productive practices and ever changing special development. Important positive co-benefits of such investments include accrual of ecosystem services that will improve health of watersheds, enhance carbon sequestration and groundwater aquifer recharge while protecting natural resources.

9. Measuring ecosystem services is an imperfect, uncertain and complex task. This analysis draws on the emerging literature of comparing the net present value (NPV) of costs against measurable service benefits through the "benefit transfer" approach. Particular emphasis is placed on figures from the most recent valuation study on watershed benefits in Sri Lanka.[16]

10. Table 5.2 provides a summary of the economic values of tropical forests across the world. The ranges vary widely but the amounts involved are large in size even when the tourism component is excluded.[17]

[15] Nature-Based Tourism and Human Elephant Conflict in Sri Lanka, World Bank 2010; Valuation of Environmental Services in Sri Lanka: A Case Study of Agriculture and Watershed Benefits in the Southern Province, World Bank, 2010.
[16] Valuation of Environmental Services in Sri Lanka: A Case Study of Agriculture and Watershed Benefits in the Southern Province, World Bank, 2010.
[17] Tourism values are discussed in a subsequent section of this annex.

Table 5.2. Economic Values of Tropical Forests Goods or Services

Forest Good or Service	Tropical Forest Value (US$ / ha / yr)
Timber, sustainable logging	30-266
Fuel wood	40
Non-Timber Forest Products	0-100
Genetic Information	0-3000
Watershed benefits	15-850
Climate Benefits	360-2200
Existence Values	2-12 (4400 for unique areas)

Source: Pearce, 2001[18]

11. Table 5.3 provides the watershed benefits and economic value of wetlands, mangroves and coral reefs in the South Western region of Sri Lanka.[19] For comparative purposes, the first column only lists the value of regulating services while the second column shows the combined value of provisioning, cultural and supporting services. The first row presents the unit values of wetland services from the (global) study undertaken for the Millennium Ecosystem Assessment (MEA) for comparison purposes, while the second row represents marsh values, the third mangrove values and the final row the value of coral reefs.

Table 5.3. Economic Value of Wetlands, Mangroves and Coral Reefs in Sri Lanka

	Regulating Services	Total Value
	(US$/ha/year)	(US$/ha/year)
Muthurajawela Marsh	1,978	2,128
MEA Average Value	1,086	3,274
Mangrove Forest	4,856	12,494
Coral Reefs	530,172	622,845

Source: World Bank 2010[20]

12. The above-mentioned World Bank study (2010) finds that the total value of watershed ecosystem services in the Southern Province varies from a low of US$2,128 per hectare (ha) in the Muthurajawela Marsh to US$12,494 for mangrove forests to as much as US$622,845/ha for coral reefs. In contrast the widely quoted Millennium Ecosystem Assessment estimates an average global value of US$3,274 for watershed benefits (see Table 5.3). When these environmental benefits compare with the payoffs from agriculture, the average revenue (defined as average yield times average farm price) from paddy cultivation is estimated at about

[18] Pearce, D.W. 2001. "The Economic Value of Forest Ecosystems." *Ecosystem Health* 7 (4) (2001), pp. 284–296.
[19] See Valuation of Environmental Services in Sri Lanka: A Case Study of Agriculture and Watershed Benefits in the Southern Province, World Bank, 2010 for precise details of geography and methodology.
[20] Valuation of Environmental Services in Sri Lanka: A Case Study of Agriculture and Watershed Benefits in the Southern Province, World Bank, 2010.

US$750/ha.[21] After deducting input costs and the opportunity cost of time, the payoffs (profits) from paddy cultivation will be much lower. These figures imply that the public benefits from conservation will outweigh the private benefits from paddy farming (the dominant crop in this area), suggesting economically excessive amounts of land conversion.

13. The project will invest US$ 18.2 million **under sub-components 3(a) and 3(c)** for enhancement of PA conservation and management (without taking the investments made on improving the quality of nature-based tourism which also contributes indirectly to PA conservation and management) and promotion and institutional capacity and investment capability to ensure better management of ecosystem services. Assuming that watershed benefits are at the lower bound (US$2,128) with a discount rate of 12 percent over 20 years, the project will break-even, if it manages to preserve only 975 ha of habitat with an economic rate of return (ERR) of 15.54 percent. Under a sensitivity analysis that lowers the discount rate to 5 percent (which may be justified for environment projects), cost-effectiveness is attained with the preservation of only 685 ha under the lower bound scenario. On the other hand, if the benefits were at the Millennium Ecosystem Assessment benefit level (US$3,274 per ha per year), then the project will need to preserve 625 ha of habitat to be considered cost-effective with an ERR of 14.6 percent.

14. To provide a sense of the magnitudes involved, if the project manages to preserve 500 ha, such an area will comprise less than 0.03 percent of all PAs in Sri Lanka. While the analysis used conservative assumptions, the project envisages the preservation of up to 100,000 ha midway through the project cycle, reaching 200,000 ha after 5 years. If the target were 100,000 ha, the net present value (NPV) of net benefits of protecting this area will be US$1.54 billion assuming the lower bound for watershed benefits, and it will amount to US$1.52 billion under the Millennium Ecosystem Assessment scenario. These assumptions generate steep benefit-cost ratios of 162 and 160, respectively.

15. An alternative is to compute the minimum environmental dollar value per hectare of land that will break even the investments assuming the target area is preserved during the project's lifetime. If the objective of preserving 100,000 ha after three years is reached, the economic value of the environmental benefits only have to be US$21/ha. On the other hand, if the goal of preserving 200,000 ha were reached by year 5, the value of the land will amount to only US$9/ha. These results justify the project as economically worth undertaking.

16. Table 5.4 shows the calculation details by lower bound and Millennium Ecosystem Assessment average scenario.

Table 5.4. Benefit-Cost Calculations for the Lower Bound and Millennium Ecosystem Assessment Average Scenarios

	Lower Bound[22]	**Millennium Ecosystem Assessment Average[23]**

[21] Price of paddy: 16 rupees/kg, yield: 80.77 bushels/acre = 5,432 kg/ha = 749.21 US$/ha (assuming an exchange rate of 116 rupees to the dollar)

[22] Lower bound scenario refers to the total value of the Muthurajawela Marsh of US$ 2,128 (see Table 9.3)

Discount Rate	12%	5%	12%	5%
Value/Hectare	US$2,128		US$3,274	
Area Managed	975 ha	685 ha	625 ha	450 ha
Costs (5 yrs)	US$18,200,000		US$18,200,000	
NPV Costs (5 yrs)	US$9,556,750	US$11,468,100	US$9,556,750	US$11,468,100
NPV Benefits (20 yrs)	US$15,497,602	US$18,165,915	US$15,284,349	US$18,360,574
Benefit/Cost Ratio	1.62	1.58	1.60	1.60
IRR	15.54%	14.60%	14.98%	15.03%

17. The project proposes an investment of US$6 million under the **sub-component 3(b)** for the enhancement of the quality of nature-based tourism in PAs over five years. These costs can be recovered with increased economic activity from nature-based tourism. This can be achieved either through increased spending (holding visitation rates constant) or an increase in visitors (holding spending constant), or some linear combination of the two.

18. The World Bank conducted a tourism survey in 2008 for a study on eco-services protection. According to 67 percent of the survey respondents, the main reason for visiting Sri Lanka is "pleasure" which includes recreation, sun-and-sand, spas, cultural, natural, ecotourism, and wildlife tours. The other reasons include recommendations from friends or family and package deals, suggesting that prior experience is important and that tour operators feel confident in packaging Sri Lanka with other places of interest. Most tourists arrive on a package tour and spend 8 to 14 days, with the median visitor moving closer to the 14-day mark and sometimes with repeat visits. Those who stayed for 1 to 3 nights in the past subsequently stayed a bit longer and some stayed beyond three weeks. The data indicate compliance with a "two-week norm" (i.e., few stay more than two weeks). The survey confirmed that more than half of the respondents stayed between 8 and 14 days.

19. The current trends in tourism emphasize the high volume and low value-added, sun-and-sand type of tourism. International tourists on travel packages spend US$41 per person per day on average while those travelling by themselves spend an average of US$73 per day. The package, non-park visitors spend less and stay 2 days less than park visitors on average and the non-package visitors 4 days less. The national park system and cultural areas offer major attractions that appear to be underutilized. To assess the revenue-generating potential of these assets, the tourism survey included a series of willingness to pay questions for the national park experience. Given the country's unique biodiversity and high density of charismatic wild species, such as elephants and leopards, Sri Lanka is well positioned to develop a nature-based tourism industry and become a more attractive tourist destination.

20. Nature-based tourism has direct effects on the economy, especially in the immediate vicinity of a national park, as well as indirect effects through the many linkages between the tourism sector and the rest of the economy. The survey covered four national parks (Bundala, Minneriya, Uda Walawe, and Yala) and one forest reserve (Singharaja) between October 2008

[23] MEA average refers to the global average Millennium Ecosystem Assessment value for wetland services of US$3,274.

and January 2009. The survey estimated the tourism multiplier in Sri Lanka as 1.14.[24] This implies that every dollar spent by a tourist will generate an additional US$0.14 in revenue for the economy.

21. The 2008/2009 survey confirmed that additional spending seems likely to occur if investments on improved facilities were undertaken, since a contingent valuation study found that, with modest improvements in facilities, tourists would be willing to pay an extra US$4.0 per day in the national parks.[25] This extra tourist spending would be generated if the investments under the proposed project were undertaken including (i) development of nature-based tourism plans for the Pas including a good marketing strategy; and (ii) investing in wildlife conservation and upgrading infrastructure to facilitate access to the parks.

22. Under **sub-component 2(b)**, successful HECOEX projects will be up-scaled and new HECOEX projects piloted with investments estimated at US$11 million over 5 years. The benefits of sub-component 2(b) are defined in terms of "avoided costs". For the economic analysis, the avoided costs comprise: (i) damaged crops and property; (ii) mitigation expenditures (i.e. fences); and (iii) elephant and human deaths. Since the data are highly variable on temporal and spatial terms and depend on the sources and methods used, the analysis of the specific HEC costs involved a comparison of three scenarios: low, medium and high cases.

23. HEC can result in other costs or losses such, as human deaths. In Sri Lanka, the number of HEC-induced human deaths is not negligible. In 2007, 51 deaths occurred in the DWC pilot sites, consisting of Mattala-Bundala-Wilmanne, Nimalawa-Kochipathana-Yala, Beralihela-Lunugamvehera and Lahugala-Galoya. An estimate for human losses stands at 500 during a 7-year period. Assigning a value to human life is controversial and human losses were not included in the calculations. Moreover, the HEC is associated with socio-economic "opportunity costs" which are defined as the costs people bear because of the HEC. Such costs include restrictions on people's movement (especially at night), competition for water resources, and loss of sleep or reduced school attendance while guarding crops or property. Since socio-economic "opportunity costs" are hard to monetize, they were excluded from the economic analysis as well. Hence, the estimates of the benefits – i.e., avoided costs – associated with sub-component 2(b) are on the conservative side.

24. The following paragraphs describe in detail the data on the HEC costs and damages presented in Table 5.5 along with the sources and methodologies used to generate the low, medium and high cases.

Table 5.5. Benefits (Avoided costs per year) of Human Elephant Conflict Interventions

	Unit	Low	Medium	High
Damage				
Number of households experiencing damage	#	58[26]	219[27]	14,700[28]

[24] Nature-Based Tourism and the Human Elephant Conflict in Sri Lanka, World Bank, 2010.
[25] Nature-Based Tourism and the Human Elephant Conflict in Sri Lanka, World Bank, 2010.
[26] Department of Wildlife Conservation (DWC), Sri Lanka. 2009. 2009 Pilot data.
[27] Department of Wildlife Conservation (DWC), Sri Lanka. 2009.

Damage per farmer per season	US$	30 [29]	128[30]	101[31]
Total Cost of Damage	***US$***	***1,768***	***28,075***	***1,484,700***
Mitigation				
Number of households investing in mitigation measures	#	65,031 [32]	91,043 [33]	130,062[34]
Mitigation expenditures per household	US$	6[35]	28[36]	50[37]
Government expenditures on electric fencing	US$	85,776[38]	85,776	85,776
Government expenditures on elephant drives	US$	1,267,241[39]	1,267,241	1,267,241
Total Mitigation Expenditures	***US$***	***1,743,203***	***3,902,232***	***7,856,117***
Elephant Deaths				
Number of elephants killed annually	*#*	*51[40]*	*120[41]*	*150[42]*
Estimated value of an elephant	*US$*	3,500[43]	3,960[44]	*4,420[45]*
Total Losses from Killed Elephants	***#***	***178,500***	***475,200***	***663,000***
TOTAL		**1,923,471**	**4,405,508**	**10,003,817**

Crop and property damage

25. The low case data for crop and property damage were obtained from the 2008 World Bank Livelihoods Survey which estimated the average loss of the surveyed farmers at US$30. Using DWC's assessment that 58 households were damaged by the HEC in 2009, the total damages to the surveyed farmers are estimated at US$1,768.

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[28] De Silva, M. 1998. Status and Conservation of the Elephant (*Elephas maximus*) and the Alleviation of Man-Elephant Conflict in Sri Lanka. Gajah 19: 1-68.

[29] World Bank Survey (2008).

[30] Bandara, R. and C. Tisdell. 2003. "Comparison of Rural and Urban Attitudes to the Conservation of Asian Elephants in Sri Lanka: Empirical Evidence ". *Biological Conservation.* Volume 110, Issue 3, April 2003, Pages 327-342.

[31] De Silva, M. 1998. Status and Conservation of the Elephant (*Elephas maximus*) and the Alleviation of Man-Elephant Conflict in Sri Lanka. Gajah 19: 1-68.

[32] This figure is obtained by assumed that 50percent of the households spend money on mitigation measures. This is a lower estimate since Bandara and Tisdell (2002) assessed that 70percent of the farmers in their survey spend a considerable portion of their income on crop protection (It is assumed that 100percent of households in the pilot areas are farmers).

[33] Same as previous footnote but here it is assumed that 70percent of the households spend money on mitigation measures.

[34] Same as previous footnote but here it is assumed that 100percent of the households spend money on mitigation measures.

[35] World Bank Survey (2008).

[36] Average of $6 and $50.

[37] Sri Lanka Wildlife Conservation Society (www.slwcs.org).

[38] Source: Department of Wildlife Conservation (DWC), Sri Lanka. 2009.

[39] Source: Department of Wildlife Conservation (DWC), Sri Lanka. 2009.

[40] Department of Wildlife Conservation (DWC), Sri Lanka. 2009. 2007 Pilot data.

[41] Kem, E and C. Santiapillai. 2000. *Asian Elephants in the Wild*. 2000 World Wide Fund for Nature Species Status Report. International Union for Conservation of Nature International. Gland, Switzerland.

[42] Perera, B.M.A.O. (2008) The Human-Elephant Conflict and Methods For its Mitigation: A Review of Studies from Asia and Africa. Proceedings of the International Elephant Conservation and Research Symposium, November 2008, Pattaya, Thailand, page 16.

[43] Bandara, Ranjith and Tisdell, Clem. 2002. Willingness to Pay for Conservation of Asian Elephants: A Contingent Valuation Study. Economics, Ecology and the Environment Series, Working Paper No. 67. School of Economics, University of Queensland, 4072, Australia. Rs 2012 million is divided by 116 (exchange rate) to obtain the dollar value. This amount is divided by 5000 elephants that are estimated to be present in Sri Lanka.

[44] Average $3,500 and US$4,420

[45] Blignaut, J., De Wit, M.P. and Barnes, J. 2008. The Economic Value of Elephants. In Scholes, B. (ed.) *Assessment of South African Elephant Management.*

26. In the medium case scenario, the data were taken from two sources: (i) the DWC's assessment of the damage to 219 households in the pilot areas in 2007; and (ii) estimate of the damage per farmer per cropping season of US$ 128 from Bandara and Tisdell's study (2003). The latter is based on data for a 5-year period in the Galgamuwa divisional secretariat division of the North Western region. The sample consisted of 300 farming families chosen randomly from six selected villages near Wilpaththu National Park. Crop damage amounted to about one-third of a farmer's earnings in a cropping season. In the medium case, the estimated total cost of crop and property damage is US$28,075.

27. The high case used data from de Silva's study of 14,700 households that suffered from HEC-related damage. The damage stood at US$101 per farmer per season and the total figure for all households in the study amount to US$1,484,700.

Mitigation

28. The low case scenario assumes that 50 percent of the total households in the pilot areas are spending a significant portion of their income on mitigation measures. In the medium case, the proportion of households is assumed as 50 percent and, in the high case, 100 percent. That corresponds to 65,031 households for the low case; 91,043 for the medium case and 130,062 for the high case. The assumption of 70 percent for the medium case scenario is taken from Bandara and Tisdell (2002).

29. Mitigation expenditures per farmer were assessed at US$6.0 in the 2008 World Bank survey used for the low case. The high case expenditure of US$50 per famer was obtained from the Sri Lanka Wildlife Society. Due to lack of data, the medium case expenditure was taken as the average of the figures for the low and high cases. Moreover, the Government has spent a significant amount on mitigation measures, mainly existing of electric fences and elephant drives. According to the DWC, government spending on electric fencing amounted to US$1.27 million and elephant drives close to US$86,000.[46] Total mitigation expenditures are estimated to range from US$1.9 million in the low case to US$4.4 million in the medium case and US$10 million in the high case scenario.

Elephant deaths

30. Elephant deaths account for a significant amount of the costs of the HEC. According to the DWC, 51 elephants were killed in the pilot areas in 2007, while estimates from the Sri Lanka Wildlife Conservation Society and Perera (2008) stood at 120 and 150, respectively. Bandara *et al* (2007) estimated the value of an elephant at US$3,500 while the estimate from Blignaut *et al* (2008) is US$4,420. Due to lack of data, the medium case estimate was calculated as an average of the low and high case figures. The costs of elephant deaths are estimated at US$178,500 in the low, US$475,200 in the medium and US$663,000 in the high case.

Total costs and benefits of project HECOEX interventions

[46] The Government spent LKR 147 million on fencing and LKR 9.95 million on elephant drives. These figures were converted to US$ using an exchange rate of LKR 116 per US$1.

31. For the low case scenario, the project will generate total annual benefits (avoided costs) of US$1.9 million. Assuming US$11 million of sub-component 2(b) investments over the project's 5-year implementation period, with a discount rate of 12 percent over 20 years the NPV for costs will be US$8.1 million while the NPV for benefits is US$14.4 million, with net benefits of US$ 6.3 million, resulting in a benefit-cost ratio of 1.8 and an economic rate of return (ERR) of 25.4 percent. From an economic perspective, sub-component 2(b) activities are worth undertaking under the low case even if other possible benefits generated by the activities were excluded. In the medium case, the NPV for benefits stand at US$32.9 million with a benefit-cost ratio of 4 while, in the high case, the NPV for benefits is US$74.7 million with a benefit-cost ratio of 9.2. See also Tables 5.6 and 5.7 for details.

32. The data for the analysis on sub-component 2(b) were obtained by means of a thorough literature review. For a more detailed assessment of the project interventions, a comprehensive survey that will collect specific site/area data will need to be performed.

Table 5.6. Benefit –Cost calculations for the lower bound and medium scenarios

	Low (US$)	**Medium (US$)**
Total benefits $/year (avoided costs)	1,923,471	4,405,508
NPV Costs (sum 1-5 yrs)	8,102,410	8,102,410
NPV Benefits (sum 1-20 yrs)	14,367,259	32,906,695
NPV Benefit- Costs (sum 1-20 yrs)	6,264,849	24,804,286
Benefit/Cost Ratio	1.77	4.06
IRR	25.4	N.A.

Table 5.7. Flow of Net Present Value of the Low Case (12 percent discount rate)

Year	**NPV Benefits**	**NPV Costs**	**NPV Benefits – Costs**
	US$	US$	US$
1	1,717,385	2,678,571	- 961,187
5	1,091,429	1,134,854	- 43,425
10	619,306	-	619,306
15	351,411	-	351,411
20	199,400	-	199,400

Benefits from reduced emissions and protected carbon stocks

13. With the absence of geographic coverage of project investment, non-financial/economic emissions reduction and carbon stock analysis that will likely result due to project activities have been undertaken. It is predicted that 5,000 ha of degraded land will be supported with assisted regeneration activities within PAs, 195,000ha of existing forests will be protected and 5,000ha of reforestation of degraded forest land and community areas will be undertaken. It has been assessed that with project interventions -6.62 to -14.36 million tCO2eq of net GHG emissions is expected during 5 years of the project period. Once the project sites are identified during project

implementation, a more robust analysis of benefits of reduced emissions and protected carbons stocks will be assessed and reported.

Map of Sri Lanka