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United Nations Development Programme

Project Document for nationally implemented projects financed by the GEF Trust Fund

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|---|---|
| Project title: Managing together: Integrating community-centered, ecosystem-based approaches into forestry, agriculture and tourism sectors | |
| Country: Sri Lanka | Implementing Partners: Ministry of Environment |
| Management Arrangements: National Implementation Modality (NIM) | |
| United Nations Sustainable Development Framework (UNSDF) 2018 – 2022: Strategic Priority (Replacing UNDAF/Country Programme Outcome Driver 4: Enhancing Resilience to Climate Change and Disasters and Strengthening Environmental Management: <i>"By 2022, people in Sri Lanka, in particular the vulnerable and marginalized are more resilient to climate change and natural disasters and benefit from increasingly sustainable management of natural resources, better environmental governance and blue/green development"</i>) | |
| UNDP Strategic Plan Signature Solution: Signature solution 4: Promote nature-based solutions for a sustainable planet. | |
| UNDP Social and Environmental Screening Category: High | UNDP Gender Marker: 2 |
| Atlas Project ID (formerly Award ID): 00117353 | Atlas Output ID (formerly Project ID): 00114160 |
| UNDP-GEF PIMS ID number: 5804 | GEF ID number: 9372 |
| Planned start date: 01 st January 2021 | Planned end date: 01 st January 2025 |
| Expected date of Mid-Term Review: 15 November 2022 | Expected date of Terminal evaluation: 15 August 2024 |
| LPAC meeting date: 26 May 2020 | |
| Brief project description: Sri Lanka's biodiversity is globally significant both for its irreplaceability and its vulnerability. About 30% of the country's land area has been designated as protected, in a range of categories managed mainly by two government agencies, the Forest Department and the Department of Wildlife Conservation. It has long been recognized that protected areas are vital but not enough alone to conserve biodiversity and to maintain natural ecological processes. In particular, habitat modification through human activities in the surrounding landscapes and seascares threatens the effectiveness of individual protected areas whether marine or terrestrial. Government agency policies, and the activities of people in different production and development sectors often conflict not only with biodiversity conservation, but also with each other. The Managing Together Project aims to establish a holistic landscape approach to incorporating biodiversity conservation into planning and implementation in agriculture, tourism and forestry in the Malwathu Oya Basin of north-west Sri Lanka. The area includes major protected areas and significant populations of elephants and other globally significant species whose viability can only be ensured through such a coordinated approach. Although the access to this area was restricted during the recent 26 year civil war, tourists are now beginning | |

to arrive in small numbers to an area where tourist infrastructure is limited. The project provides a valuable opportunity to establish social and environmental safeguards in time to avoid repeating damaging mistakes in tourism development in the south of the country. The project will work with national institutions to include in existing in-service and pre-service training programs the concepts and practice of "mainstreaming" – the routine and mandatory consideration of biodiversity and ecosystem services in decision-making and action across all government sectors. At district and divisional levels the project will work with government and civil society across multiple sectors and jurisdictions to "mainstream" biodiversity conservation into natural resources management and land-use planning in three separate parts of the Malwathu Oya Basin - two terrestrial (Ritigala to Mihintale and Giant's Tank/Madhu Road-Wilpattu) and one marine (Gulf of Mannar/Vankalai-Arippu-Silavaturai). Livelihoods-focused interventions will be used to link biodiversity conservation with socio-economic benefits. The key to success will be the project's innovative way of involving the public and local government jointly in planning and action. The project will set up and implement a long-term monitoring programme to track the impacts of the landscape approach, make necessary adjustments based on results in the three "trial landscapes", and establish a dissemination programme to encourage adoption of the modified approach in other parts of the country.

FINANCING PLAN

| | |
|--|----------------------|
| GEF Trust Fund | USD 3,346,700 |
| UNDP TRAC resources | 0 |
| Cash co-financing to be administered by UNDP | 0 |
| Total Budget administered by UNDP | USD 3,346,708 |

PARALLEL CO-FINANCING

| | |
|--|-----------------------|
| UNDP | USD 250,000 |
| Government | USD 20,202,222 |
| IUCN | USD 100,000 |
| GIZ | USD 6,700,000 |
| Biodiversity Sri Lanka | USD 2,000,000 |
| Total co-financing | USD 29,252,222 |
| Grand-Total Project Financing (1)+(2) | USD 32,598,930 |

SIGNATURES

| | | |
|---|---------------------------------------|---|
| Signature:  Dr. Anil Jasinghe, Ministry of Environment, Sri Lanka | Agreed by Implementing Partner | Date/Month/Year: 01 January 2021 |
| Signature:  Ms. Faiza Effendi, Officer-in-Charge, UNDP Sri Lanka | Agreed by UNDP | Date/Month/Year: 24 December 2020 |



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Acronyms

| | |
|---------|--|
| AWP | Annual Work Plan |
| BIOFIN | Biodiversity Financial Initiative |
| CADEC | Coastal Aquaculture Development Training |
| CBO | Community Based Organisation |
| CC&CRMD | Coast Conservation and Coastal Resource Management |
| CCE | Community-based Conservation Experts |
| CD | Country Director |
| CEA | Central Environmental Authority |
| CKDu | Chronic Kidney Disease of Unknown Etiology |
| CR | Critically Endangered |
| CRIP | Climate Resilience Improvement Project |
| CTA | Chief Technical Adviser |
| DCD | Deputy Country Director |
| DD | Data Deficient |
| DLLUPC | Divisional Level Land Use Planning committee |
| DLUPC | District Land Use Planning Committees |
| DOA | Department of Agriculture |
| DSD | Divisional Secretariat Division |
| DWC | Department of Wildlife Conservation |
| EA | Executing Agency |
| EN | Endangered |
| END | Endemic |
| ERD | Department of External Resources |
| ESA | Environmentally Sensitive Areas Project |
| ESCOMP | (World Bank) Eco-systems Conservation and Management Project |
| ESIA | Environmental and Social Impact Assessment |
| FD | Forest Department |
| FEO | Federation of Environmental Organisations |
| FFPO | Fauna and Flora Protection Ordinance |
| FSMP | Forestry sector Master Plan of 1995 |
| FVC | Focal Village Cluster |
| GCS | Global Conservation Status |
| GHG | Green House Gasses |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| GMSL | Green Movement of Sri Lanka |
| GND | Grama Niladhari Division |
| GOE | General Operating Expenses |
| GOSL | Government of Sri Lanka |
| HCVF | High Conservation Value Forest |
| IA | Implementing Agency |
| IAS | Invasive Alien Species |

| | |
|---------|---|
| IEO | Independent Evaluation Office |
| ILCA | International Landscape Conservation Design Adviser |
| IND | Indigenous |
| INRM | Integrated Natural Resource Management |
| ISEA | Integrated Strategic Environmental Assessment |
| ITI | Industrial Technology Institute |
| IUCN-SL | International Union for Conservation of Nature Sri Lanka Country Office |
| LC | Least Concern |
| LCO | Learning and Communication Officer |
| LCP | Landscape Conservation Planner |
| LLRC | Lessons Learnt and Reconciliation |
| LMORP | Lower Malwathu Oya Multi-Purpose Reservoir Project |
| LUPPD | Land Use Policy Planning Division |
| MASL | Mahaweli Authority Sri Lanka |
| MoE&WR | Ministry of Environment and Wildlife Resources |
| MTR | Mid-term Review |
| N/A | Not Applicable |
| NAQDA | National Aquaculture Development Authority |
| NARA | National Aquatic Resources Research and Development Agency |
| NBD | National Budget |
| NBSAP | National biodiversity Strategy and Action Plan |
| NCS | National Conservation status; National Conservation Strategy |
| NPD | National Project Director |
| NSC | National Steering Committee |
| NBSAP | National Biodiversity Strategic Action Plan |
| NE | Not Evaluated |
| NEP | National Environmental Policy of 2003 |
| NIE | National Institute of Education |
| NIRP | National Involuntary Resettlement Policy |
| NPD | National Project Director |
| NPSFDP | Northern Province Sustainable Fisheries Development Project |
| NT | Near Threatened |
| NWP | National Wildlife Policy of 2000 |
| OAI | Office of Audits and Investigations |
| PA | Protected Area |
| PB | Project Board |
| PAC | Project Appraisal Committee |
| PAP | Project Affected Persons |
| PE | Possibly Extinct |
| PIR | Project Implementation Report |
| PMU | Project Management Unit |
| POPP | Programme and Operations Policies and Procedures |
| PPTA | Project Preparation Technical Assistance |

| | |
|---------------------|--|
| PRA | Participatory Rural Appraisal |
| PRF | Project Results Framework |
| RDO | Rural Development Officer |
| RR | Resident Representative |
| SES | Social and Environmental Standards |
| SGP | Small Grants Project |
| SHA | Self Help Approach |
| SHG | Self Help Groups |
| SLIDA | Sri Lanka Institute of Development Administration |
| SLITHM | Sri Lanka Institute of Tourism and Hotel Management |
| SLTDA | Sri Lanka Tourism Development Association |
| SLYCAN | Sri Lankan Youth Climate Action Network |
| TAC | Technical Advisory Committee |
| tCO ₂ eq | Equivalent tons of CO ² |
| TE | Terminal Evaluation |
| ToC | Theory of Change |
| TL | Trial Landscape |
| TNA | Training Needs Analysis |
| TSP | Tourism Strategic Plan |
| UECP | Upper Elahara Canal Project |
| UNDP | United Nations Development Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| UNFPA | United Nations Population Fund |
| UNSDF | United Nations Sustainable Development Framework |
| VES | Visual Encounter Survey Technique |
| VT | Vocational Training |
| VU | Vulnerable |
| WDO | Women's Development Officer |
| WNPZIP | (World Bank Wilpattu National Park and Influence Zone Management in Sri Lanka) |

II. Development Challenge

2.1 Biodiversity on a crowded island

1. Sri Lanka, 65,610 km² in area, has exceptional biodiversity with extraordinarily high rates of endemism¹. It has been recognized internationally for both the irreplaceability and the vulnerability of its biodiversity. The whole island is an Endemic Bird Area, and there are 70 Important Bird Areas². Having lost more than 70% of its original habitat, Sri Lanka, together with the Western Ghats of India, is one of 36 global Biodiversity Hotspots³. Expansion of agriculture over the last two centuries has destroyed and fragmented Sri Lanka's forests, and the human population of 21 million is increasing at 1.1% per year⁴ and is expected to reach 24 million by 2050. At 342 people per km² the country has the 12th highest population density of 49 Asian countries in Asia⁵.

2.2. Economic growth, poverty and the environment

2. Sri Lanka is a democratic republic and unitary state with an executive presidential system under which the President is both head of state and head of government. After early adoption of a market based economy in the late 1970's economic growth was affected by the 26 year civil war with Tamil separatists which ended in 2009. In the 2011-2016 National Development Policy Framework government recognized that the country cannot rely on economic growth alone, and aimed to preserve cultural values and traditions while developing a knowledge-based economy with better living standards for everyone. However, the current national development strategy, Vision 2025, puts increasing emphasis on growth, and foreign direct investment, notably from China⁶, at the expense of environmental impacts that have not been assessed adequately. Some aspects of China's investments, such as loans for dams are controversial, and others, such as the Hambantota airport and port have not yet lived up to expectations, but investment continues, notably in a project to build a massive free trade zone on land claimed from the sea in Colombo harbour, the environmental impacts of which (sand requirements for example⁷) have still not been assessed adequately.

3. Sri Lanka's National Gross Domestic Product (GDP) has increased rapidly over the last decade, and the country rose to lower Middle Income Country (MIC) status in 2010. The Human Development Index (HDI) is 0.770, indicating "high human development", and Sri Lanka lies 76th out of 189 countries assessed⁸. Per capita GDP is about US\$4,300⁹, well above that of the other countries of South Asia. However, wealth distribution is very unequal: there are significant disparities in income, infrastructure and access to basic services, and rising wealth in some parts of society is leading to changes in consumption patterns of food, water and energy¹⁰. The proportion of the population living below US\$1.30 per day fell from 22.7% in 2002 to 3.3% in 2018¹¹, but 25% of the population still live on less than US\$2.50 per day¹². Considerable inequalities and inequities in food and nutrition persist¹³. The challenge here is not only to ensure food security and nutrition for 4.6 million undernourished people, but also to provide safe, high quality food for the additional 2.4 million people expected by 2050. Sri Lanka has one of the highest rates of acute moderate malnutrition (wasting) in the world – 15% prevalence – and stunting, at 17% prevalence, is affecting physical and mental development. Micronutrient deficiencies, especially anemia, affect all age groups. Overnutrition is also emerging rapidly, as a result of income disparities, with 45 percent of women of reproductive age overweight or obese. Rising commodity prices, partially attributable to increasing production costs, disproportionately affect women and the poor, and bad rural infrastructure is a severe constraint for farmers in marketing their produce.

1 <https://lknhm.nus.edu.sg/app/uploads/2017/06/s12rbz001-004.pdf>

2 <http://datazone.birdlife.org/eba/factsheet/126>

3 <https://www.cepf.net/our-work/biodiversity-hotspots/western-ghats-and-sri-lanka>

4 <https://data.worldbank.org/indicator/sp.pop.grow>

5 <https://www.indexmundi.com/map/?t=0&v=21000&r=as&l=en>

6 <https://www.forbes.com/sites/wadeshepard/2016/07/27/china-just-asked-for-15000-acres-of-land-in-sri-lanka-for-a-million-worker-sez/>

7 <https://www.theguardian.com/cities/2018/aug/02/sri-lanka-new-dubai-chinese-city-colombo>

8 http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/LKA.pdf

9 <http://www.imf.org/external/datamapper/NGDPDPC@WEO/LKA>

10 <https://lk.one.un.org/our-work/unsdf/>

11 http://www.statistics.gov.lk/poverty/SpatialDistributionOfPoverty2012_13.pdf

12 <http://www.dailymirror.lk/article/CB-Governor-says-one-quarter-of-population-still-trapped-in-poverty-149874.html>

13 <https://documents.wfp.org/stellent/groups/public/documents/eb/wfp293168.pdf>

4. As government reacts to maintain incomes, provide services, and reduce inequalities, it struggles to keep to its long-term aims encompassing conservation and sustainable management of natural resources such as land, water, forests, wildlife and fish stocks. Many rural people meet their immediate subsistence needs, or generate income, through unsustainable fishing and farming practices that prejudice future yields because there are few if any benefits to restraint, or stinting. The civil war left a legacy of social tensions between and within ethnic groups, particularly in the North and East of the country, and resettlement programmes and return of previous residents have led to disputes over land tenure. This adds to the challenge of establishing a sustainable economy while protecting Sri Lanka's globally significant biodiversity. Loss of biodiversity often has greater immediate effects on poor rural people than on urban residents whose higher consumption can drain resources far away from the cities where they live. The highest rates of persistent poverty and vulnerability to economic or climatic shocks are in (a) the urban corridors of the south-west and (b) the rural areas of the north and east which were most affected by the civil war⁷. Chronic Kidney Disease of Unknown Etiology (CKDu)¹⁴ is associated with high mortality among poor farmers, especially in the North Central Province (Annex P).

2.3 Policy and practice

5. The overarching emphasis on pursuit of economic growth encourages government, residents and developers to make rapid capital out of natural resources and to promote consumptive and non-consumptive methods of exploitation that, although perhaps successful elsewhere, have not been adequately tested under local conditions. This is leading to loss of biodiversity, and reduction in the productivity of the natural environment. Encroachment of state land for cultivation, infrastructure development, or gem mining, for example reduces biodiversity and fragments habitats, overuse and misapplication of pesticides and fertilizers, sometimes encouraged by government subsidies, threatens biodiversity and ecological integrity¹⁵. Killing and maiming of forest-based wildlife, mainly of elephants, is widespread, usually in retaliation for crop damage and killing of humans. It is estimated that over 4,000 elephants have been killed by people, usually in ways that incur great pain and suffering, since 1950, and over 1,400 since 2005¹⁶.

6. Permissive government policies regarding encroachments, overlapping and conflicting actions by different government agencies, political interference, and commercialization of rural economies¹⁷ contribute to such environmental damage¹⁸. Weak management and governance of fisheries is leading to the overexploitation of marine resources, including damaging levels of bycatch, and the degradation of coastal ecosystems. Despite extensive evidence of overexploitation and enforcement of laws governing bottom trawling, for example, remain poor. Investments in fishing fleet capacity are being made with the expectation of increasing incomes¹⁹, but this may not prove the case (see Section 3.3). Since 2013 tourism has contributed to the national economy as the third largest earner of foreign exchange^{20,21}, and foreign tourist arrivals reached 2.1 million in 2017. Environmental damage has resulted from over-visitation, particularly at coastal sites and in national parks where iconic wildlife such as elephants, sloth bears and leopards are viewed²². Government policy calls for a substantial increase in foreign tourist arrivals, an increase in per capita expenditure from US\$168 to US\$200 per day by 2020²³, and an emphasis on tourism based on specialist interests, in particular on culture and the environment^{24,25}.

14 <https://medium.com/@VilPhoto/in-the-hot-zone-chronic-kidney-disease-in-sri-lanka-bb9c21ea6847>

15 <https://medium.com/@VilPhoto/in-the-hot-zone-chronic-kidney-disease-in-sri-lanka-bb9c21ea6847>

16 <http://www.ft.com/ft/content/557390/Elephant-human-conflict-the-most-crucial-issue-not-even-identified>

17 http://redd.lk/web/images/contents/document_centre/Final_DD_Summary_Completed.pdf

18 <https://www.cbd.int/doc/world/lk/lk-nbsap-v2-en.pdf>

19 <https://www.adb.org/sites/default/files/project-documents/49325/49325-001-tacr-en.pdf>

20 Direct reflects internal spending by individual travelers. Indirect includes wider impacts such as investment spending (hotel construction for example)

21 <https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2017/srilanka2017.pdf>

22 http://repository.kln.ac.lk/bitstream/handle/123456789/13623/SV_139-152.pdf?sequence=1

23 <http://www.slda.lk/sites/default/files/tourism-strategic-plan-2017-to-2020.pdf>

24 <https://www.slideshare.net/BTOEducational/sri-lanka-tourism-strategic-plan-and-action-2017-2020>

<https://2017.globaleco.com.au/perch/resources/Gallery/rashmini-mather.pdf>

<http://www.slda.lk/sites/default/files/tourism-strategic-plan-2017-to-2020.pdf>

25 <https://oxfordbusinessgroup.com/overview/rising-star-government-setting-out-its-plans-sector>

7. Sri Lanka has designated 30% of its land as protected areas (the highest national coverage in Asia) and has well-developed wildlife legislation to protect its globally important biodiversity^{26 27}. Environmental degradation and loss of biodiversity continues, however, despite the extensive conservation measures put in place. Protected areas are vital but they are insufficient alone, no matter how good their internal management, to protect biodiversity and ecosystem services. Habitat destruction and fragmentation, pollution of air, soil and water, soil degradation, destruction of coral reefs and accumulation of solid waste threaten biodiversity inside and outside protected areas.

8. Industrialisation, population growth and an emphasis on a fast-growing economy has led to and is leading to widespread environmental problems and threats to biodiversity. Proper attention to the environment is known to promote long-term economic sustainability, and in Sri Lanka, as elsewhere, both government and civil society have been active in promoting green development policies. Development of such policies is generally slow, however, and effective implementation is often even slower: so change is gradual and requires genuine commitment, incentives and capacity building, backed up by political will. Governments tend to keep the emphasis on rapid economic growth for political reasons and because many believe that environmental problems can be tackled later.

9. Sri Lanka Tourist Development Authority's Strategic Plan 2017-2020, and Tourism Vision 2025 aims to make tourism the country's second biggest earner of foreign exchange (it is at present in third place after remittances from overseas workers, and garment and textile exports)^{28,29}. The Vision recognizes that more needs to be done than simply increase hotel accommodation and that poor management, including management of environmental impacts that feed back into the market, and attention to the patchy infrastructure and uneven implementation of laws and regulations. However, no matter how much is written in government documents such as Tourism Vision 2025 about the importance of sensitive development, the arrival of entrepreneurs setting up their tourism ventures will have to be monitored carefully to ensure that environmental impacts are kept to acceptable limits and that the mistakes made in unplanned and unregulated development in other parts of the country are not repeated.

10. Tourism Vision 2025 highlights the potential of the north, off limits during the civil war, and now being opened up to tourism, particularly along the coast. Although it specifically lists conservation as one of seven guiding principles (Conservation and world-class management of assets), relevant actions are not described in any detail, and the challenge at the local level will be to achieve adequate coordination to guide tourism development to control the impacts on environment and society of both the physical infrastructure and the activities undertaken. For example, a master plan ordered by the Ministry of Megapolis and Western Development of Sri Lanka, will remodel Trincomalee, 100 km to the east of the MT Project landscape, into a hub for tourism, exports and logistics and will establish Hingurakgoda as a major international airport³⁰. The master plan follows a 'B.L.U.E. (biodiversity, liveability, uniqueness, economy) approach and is aimed at protecting the biodiversity of Trincomalee while strengthening its economy. However, guidance on how to achieve is likely to be required. Similar plans are under development for Mannar, in the selected Project landscape (see Section 3.3). Some have suggested the reopening of the ferry service between India and Talaimannar, the rail head, as a high proportion of foreign tourists are from India. This is however, complicated by security considerations³¹.

11. In summary, the main challenges facing the project in achieving its objective are:

- the overarching emphasis on the pursuit of economic growth, at the cost of human wellbeing and the natural environment
- social tensions and feelings of instability related to resettlement, land tenure, and events during and following the war;

²⁶ far exceeding Aichi Target 11 for terrestrial protected areas, although it has few marine protected areas

²⁷ <https://www.bipindicators.net/indicators/coverage-of-protected-areas-terrestrial-and-marine>

²⁸ <https://www.slideshare.net/BTOEducational/sri-lanka-tourism-strategic-plan-and-action-2017-2020>

<https://2017.globaleco.com.au/perch/resources/Gallery/rashmini-mather.pdf>

<http://www.slttda.lk/sites/default/files/tourism-strategic-plan-2017-to-2020.pdf>

²⁹ <https://oxfordbusinessgroup.com/overview/rising-star-government-setting-out-its-plans-sector>

³⁰ <https://12go.asia/en/post/6059/trincomalee-to-become-eastern-tourism-hub>

³¹ <https://timesofindia.indiatimes.com/city/chennai/tamil-nadu-pushes-for-ferry-service-with-sri-lanka/articleshow/60077635.cms>

- the high proportion of female headed households in the Project landscape
- the high demand for natural resources;
- unsustainable fishing and farming practices
- absentee entrepreneurs exploiting local people through loans and bad contractual arrangements;
- many people living from day to day without financial reserves
- government agencies acting independently of each other;
- government subsidies that lead to excessive fertilizer use;
- development projects acting in isolation;
- relatively low levels of knowledge and skills related to ecology, biodiversity conservation, and best practices in tourism and integrated natural resource management;
- low levels of law enforcement related to natural resource management;
- complex local government arrangements, with some sectors devolved, some administered from Colombo, and some officials elected locally, and others appointed centrally;
- recent political instability linked to disputed powers of the executive presidency.

12. Various factors provide favourable conditions for the project to build upon, including a widening realization in government and among the public that environmental degradation is serious and accelerating, a large number of green movements, public demand for changes in how tourism is conducted, the high global importance of Sri Lanka's biodiversity, and the large number of development projects that overlap geographically and thematically with the Project.

III. Strategy

13. The Long-term Goal of the project is: **Integrated, ecologically sensitive management of natural resources that protects biodiversity, reduces resource conflicts, and maintains ecosystem services.**

The Immediate Objective or "End of Project State" is: **Strengthened protection of globally significant biodiversity through mainstreaming of conservation and sustainable practices into land use planning and sectoral decision-making in forestry, agriculture³² and tourism sectors.**

14. The Project Title captures the essence of 'mainstreaming' – taking biodiversity into consideration routinely in all decision-making and actions by government - and it stresses the importance of working together on this with the communities whose long-term wellbeing depends on sound ecologically-sensitive management of natural resources. The Project covers parts of three focal areas of GEF - biodiversity, land degradation, and sustainable forest management. So it takes a holistic approach, balancing the needs of people with the needs of other species, and realizing the interdependence between people and other people, and between people and nature; as opposed to the narrower approach of "defending" nature from the "harm" of human actions.

3.1 Theory of Change

15. Theory of Change (ToC) sessions first developed a picture of the general "Pre-conditions (P)" required to reach the Immediate Objective, or End of Project State (E) (please see **Annex K** and figure 1). This picture was compared with the *status-quo* - the Pre-project State (S), and the underlying causes, or Drivers (D), that perpetuate the Pre-Project State, along with any Favourable Conditions (F) that counteract to some extent those drivers. The Changes Required (R) to achieve the Pre-conditions (P), and the Mechanisms (M) for delivering changes, indicate how the Drivers (D) can be addressed and then converted into a rough Project design with Outcomes and Outputs (Annex K1). The design of the TOC diagrams for the overall project (Annex K2, K3) and for each natural resource management sector (Annex K4 to K7) is at first glance surprising because the flows are both downward from the Drivers (D) to the Pre-project State (S), and upward from the Favourable Conditions (F) through the Changes Required (R) and Mechanisms for Change (M) to the Pre-conditions (P) and the End of Project State (E).

16. The required changes from the *status quo* will amply contribute to the relevant UNDAF Country Programme Outcome (see cover page), namely that Sri Lankans, in particular the vulnerable and marginalized, will be more resilient to climate change and natural disasters and will benefit from increasingly sustainable management of natural resources, better environmental governance and blue and green development.

17. Required changes include:

- Improved levels of knowledge and understanding of the need for biodiversity mainstreaming and safeguarding;
- Improved cross-sectoral and trans-jurisdictional co-ordination among government agencies;
- Improved capacities in local government and communities for initiation and management of modified livelihoods;
- Strengthened political will and proactive measures to enforce existing policies and legislation and to review ecologically perverse incentives;
- Resolution of problems that result in social instabilities, uncertainties over land tenure, and heavy dependence on unfair loans;
- Elimination of damaging practices in agriculture, tourism, fisheries, forestry and wildlife conservation
- Improved water management;
- Increased involvement of public in land-use decision making;
- Greater involvement of women and young people in joint decision making at the community

³² Agriculture in this context includes fisheries and the project addresses both marine and freshwater biodiversity conservation and associated livelihoods.

- level; and
- Improved market communication and access for local produce, including possibly traditional varieties for which premium prices may be sustainable.

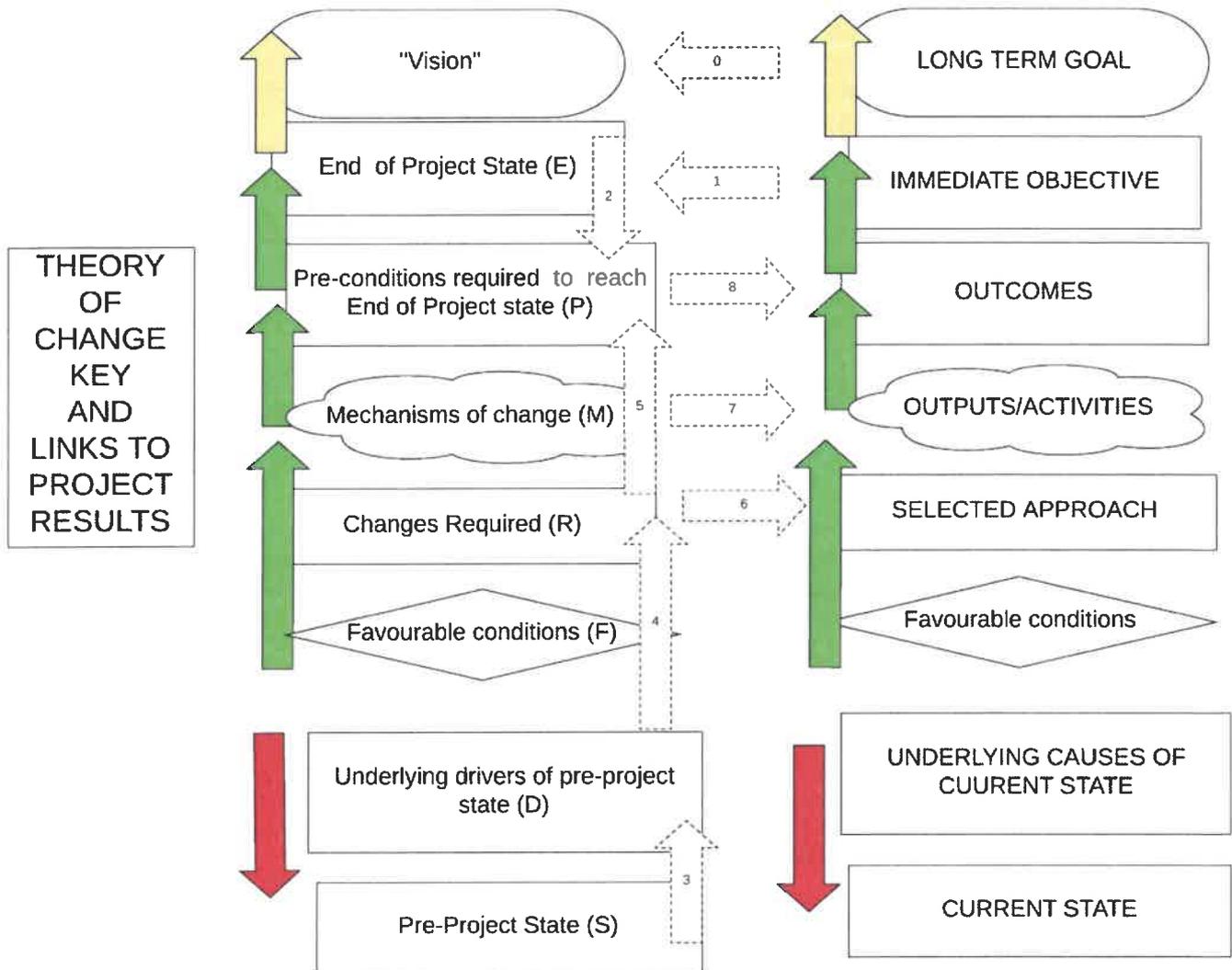


Figure 1: Project's Theory of Change (ToC)

18. Not all of these required changes will be achievable by the Project alone, although the Project will contribute as far as feasible and will work with partners to address those outside its immediate scope. Policy changes take a long time to achieve, longer than the normal duration of GEF projects, and lessons learned from similar projects in Sri Lanka and elsewhere show that it is easy to get bogged down in technical papers and policy discussions "upstream" at the expense of making progress in understanding, capacity building, support and action in the field and at community and local government levels.

19. Current policies and laws do not constitute a barrier to mainstreaming of biodiversity into land-use planning and natural resource management in Sri Lanka: indeed a considerable amount of policy and legislative work has already been done in agriculture, forestry, fisheries and tourism. Required policy changes, and solutions to widespread uncertainties in land tenure, for example, are likely to take over four years to achieve and will require political and administrative decision making beyond the control of the Project, so a deliberate decision has been made to concentrate on achieving results that current policy and capacity allows. The Project will operate within existing policy and institutional frameworks and with reference to existing categories of land protection and will prepare and push forward recommendations for those changes in policy and practice that are beyond the project's immediate reach, in parallel with an intensive programme of demonstration and advertisement of results.

20. Mechanisms to achieve changes within the Project's scope include:

- in-service and pre-service training across government sectors;
- slow, patient and genuine engagement with local communities, government agencies and relevant development projects;
- livelihood-focused interventions that provide incentives for positive impacts on biodiversity;
- application of a strategic landscape conservation design approach to land-use planning;
- central governmental directives to local government agencies in project areas requiring close collaboration with the project;
- financial mechanisms such as private sector investments, payments for ecosystem services, and benefit sharing by local businesses that rely on community restraint in activities deleterious to biodiversity and ecosystem services;
- specific training for community members in skills required for livelihood-focused interventions such as tourism or aquaculture;
- environmental assessment for all project interventions;
- technical support for eco-certification schemes in fisheries, agriculture and tourism;
- monitoring of project impacts both during and following the project;
- in order to demonstrate these mechanisms an overarching facilitation of the project's selected approach will be required in the form of central government directives to authorize the project's selected approach of cross-sectoral and trans-jurisdictional planning and management.

3.2 Selected approach

21. An ecological approach to natural resource management and development is essential not only for biodiversity conservation but for the sustainability of human populations. Ultimately all Sri Lankans depend on biodiversity and should help to conserve it. Broad public participation is required to achieve biodiversity conservation and local knowledge should be respected and used.

22. Protected areas were once enough to achieve conservation, but changes and fragmentation of habitats led to increasing extents of inhospitable areas between protected areas, that are too difficult for certain wild species to cross. So protected areas, although vital, are not enough alone. The Project will take a landscape approach to conservation, with protected areas included as part of the wider landscape where agriculture, forestry, fisheries and tourism have impacts on biodiversity and ecological processes. Landscape in the context of this landscape approach, is an area with two or more types of ecological communities, or habitat types, including human modified habitats.

23. The landscape approach is not a magic solution and it is a mistake to have too rosy a picture of the results. There will be overall gains, but there will be trade-offs and there will be losers as well as winners, among humans and among other species. The basic approach will be to identify the needs of wild species and the needs and impacts of humans; to analyse systematically where overlaps and conflicts occur and are likely to develop; and to plan and carry out actions (and policy changes if necessary) so that land uses provide for the needs of both people and wild species. This is a complex and time-consuming process.

24. Mainstreaming has been advocated for many years and shifts to "green development" have been signaled in many countries worldwide although often not carried through. Actions presented as "green" are often not that green when analyzed. So the Project will emphasize environmental assessment of all interventions. The Project is especially well placed to guide tourism, which is in the early stages of its development in the chosen project sites, and thus to avoid the kind of damaging tourist developments that have occurred in parts of southern Sri Lanka, including some national parks and some coastal areas outside national parks.

25. Although conservation of nature in general is seen as valuable, conservationists find that in practice they have to fight the same battles again and again to save wild species from harm. There is a perceived need to express the value of wild species in economic terms that are then used as incentives for biodiversity conservation or arguments against land uses harmful to biodiversity. This can be productive in driving policy development, although there is still not wide enough acceptance or understanding of the fact that maintenance of biodiversity and ecosystem services is positive for health, the economy

and livelihoods in the long term; and indeed that well-being, including access to the natural environment, is a better measure of happiness than financial wealth. However, reliance solely on economic or utilitarian arguments assumes that people will not conserve nature unless it is in their direct benefit. So it creates an impression of unending conflict between humans and nature. The existence of an intrinsic value in nature would free conservationists of the obligation to prove the value of conserving particular species, but this is seen as prioritizing other species over humans. The answer is to view and treat humanity as part of nature not as a rival. The Managing Together Project, aims to contribute to a) *acceptance of the interdependencies between people and nature, both in local government and in communities* and b) *an opportunity to act on that acceptance and provide a model for replication elsewhere.*

26. The Project takes a two-prong approach to getting biodiversity conservation and sustainable practices "mainstreamed" into decision-making in natural resource management. It will work with government at Provincial, District and Divisional Secretariat levels on overall landscape conservation designs that provide for the needs of humans and wild species, and, concurrently, with local communities at the village level on land-use plans that eliminate or reduce damaging practices and introduce, where appropriate, livelihood-focused initiatives that rely on immediate actions to conserve biodiversity.

27. The current planning approach is typically through single institutions with stakeholder input as part of the process, and land-use plans in Sri Lanka often simply assign land to different categories of use. The Project's landscape conservation design approach will be stakeholder driven, will involve the full participation of multiple agencies, local communities, and adjacent administrations or jurisdictions and will be guided by a strategic analysis of the requirements of wild species, particularly in terms of habitat connectivity. The landscape design approach is holistic and value-driven and guides collective decision-making and action across jurisdictions and sectors. It will result in a "living" product - text, maps, data, strategic plans, decision support tools and cooperative agreements - determined by the stakeholders and updated regularly. Once the landscape designs have been completed the District governments will be expected to ensure that all agreed conclusions and recommendations, including guidelines on mainstreaming of biodiversity into NRM and tourism, are reflected in their own District Development Plans and decision-making processes. In this way the impact of the Project will extend beyond the landscape into whole Districts.

28. There is considerable experience globally in landscape scale, community-centred approaches to natural resource management, but surprisingly few useful generalizations emerge. Much depends on specific circumstances. At the village level the project will follow participatory methods such as described by Bello et al (2016)³³ talking with local people patiently, first asking them how they themselves want to plan their land use, and then including biodiversity conservation objectives as relationships are formed and the project is able to explain the benefits. The resulting land use plans can be gazetted under the law, enabling the district and divisional secretaries to incorporate them into their development plans and, for example, implement development controls stipulated for sensitive areas.

29. Reid et al (2016)³⁴ urged practitioners of the landscape approach to monitor and document carefully inputs, short-term outcomes and long term performance. Monitoring the results after the project ends is particularly important to guide landscape planning initiatives worldwide: many have been implemented but data on long term impacts are sparse. It should be possible to achieve the objective of *strengthening* protection of biodiversity within the 48 months allowed, but that is a short time in which to get substantial impacts on the ground. One of the main lessons learned is that achieving lasting change in landscape management takes longer than the typical project duration of 3-5 years. Steps will be taken to ensure both continuity and monitoring after the project ends, and project staff, rather than merely visiting from time to time, will live and work full time in the Project landscapes throughout the whole duration of the Project.

³³ Bello, F., et al. (2016). "Community participation framework for protected area-based tourism planning". *Tourism Planning & Development* Vol. 13, Iss. 4, 2016.

³⁴ Reed, J. et al. (2016). "Integrated landscape approaches to managing social and environmental issues in the tropics: learning from the past to guide the future their progress is measured and to support indicators, so they capture measurements". *Global Change Biology* (2016) 22, 2540–2554, doi: 10.1111/gcb.13284

3.3 Project Landscape

30. The Malwathu Oya river basin was selected as the geographical focus for the Project according to criteria related to ridge to reef ecological flow, species and ecosystem diversity, forest cover, agriculture, irrigation and tourism potential (**Annex L**). It is an area of considerable biodiversity and cultural significance: heavily populated by humans, however, with additional people still being resettled in the area following the end of the 26 year civil war in 2009, natural resources are being overexploited and cultural sites are being damaged (**Annex R**). The selected landscape is predominantly in Anuradhapura and Mannar Districts and also includes a small part of Vavuniya District to the north, and an even smaller part of Puttalam District to the south. It lies in the dry and arid bioclimatic zones of Sri Lanka, and includes dry-mixed evergreen forests, arid-mixed evergreen forests, and a mosaic of natural and anthropogenic ecosystem types such as riverine evergreen forests, rock outcrop forests, dry deciduous thorn scrublands, home gardens, abandoned *chena* (shifting cultivation sites) and other lands, working and abandoned tanks, saltmarshes and sandy shores, mangroves, coral reefs and seagrass meadows.

31. Flowing north-west, slowly and gradually, from Ritigala Mountain, which rises sharply from the surrounding plain, passing Anuradhapura city, and on through dry and arid forest past the Wilpattu National Park, to the Gulf of Mannar, the Malwathu Oya has an important place both in the history and in the ecology of Sri Lanka (Annex L). Its watershed is home to Asiatic Elephant (*Elephas maximus* EN), the Leopard (*Panthera pardus* VU), and the Sloth Bear (*Melursus ursinus* VU), and Dugongs (*Dugong dugon* VU), which were once hunted almost to local extinction, hold on in small numbers on sea-grass beds offshore. The Giant's Tank, which is joined to the Malwathu Oya by an anicut is well known as a place rich in migratory and resident birds, and draws ornithologists from far away. Mannar District in particular is important for migratory birds traveling on flyways down the eastern and western coasts of India. Heuglin's Gull (*Larus fuscus heuglini*) (LC) and Great Knot (*Calidris tenuirostris* EN), make a return journey each year from northern and north-eastern Russia. During a survey at Vidattaltivu Lagoon in February 2010 over a million migratory shore-birds were in view at one point (National Trust of Sri Lanka, 2016). Two Ramsar sites, the Vankalai Sanctuary³⁵ and the Wilpattu Ramsar Wetland Complex³⁶ have been declared, and Vankalai hosts more than 1% of the global population of Greater Flamingo (*Phoenicopterus roseus*) (LC) and Eurasian Wigeon (*Anas penelope*) (LC).

32. The forests, thorn scrub, grasslands and wetlands of the Project landscape and the lagoons, reefs and sea-grass beds of the seascape are home to many species of endemic birds (8), reptiles (8), mammals (2), fish (10) and amphibians (2) that are not globally threatened but nevertheless are of great scientific interest and beauty. The endemic Blotch Bowfinger Gecko *Cyrtodactylus yakhuna*, for example, (Figure 4) has a restricted range in the Northern and North-Central provinces. Resident birds with restricted ranges in Sri Lanka include the Long-tailed Shrike (*Lanius shach* LC), Black Drongo (*Dicrurus macrocercus* LC) and Indian Courser (*Cursorus coromandelicus* LC) which have affinity with the Deccan avifauna of southern India. Biodiversity exploration in the watershed was suspended for a while during the long civil war which ended in 2009, and we are now beginning to learn more about the less well-known species of the area, many of them endemic to Sri Lanka and of great interest to biologists. The unobtrusive, and ordinary looking fish, *Labeo lankae* CR³⁷, is restricted to parts of the Malwathu Oya basin (although it is of course possible that it might be found elsewhere, even on the Indian mainland).

33. Other globally threatened animal species include the Mugger (*Crocodylus palustris* VU), Indian Star Tortoise (*Geochelone elegans* VU), Asian Woolly Neck Stork (*Ciconia episcopus* VU), Lesser Adjutant Stork (*Leptopilus javanicus* VU), Spoon-billed Sandpiper (*Calidris pygmaea* CR³⁸), Toque Macaque (*Macaca sinica* EN³⁹), Purple faced Leaf Monkey (*Trachypithecus vetulus* EN), Sambhar (*Rusa unicolor* VU) and Fishing Cat (*Prionailurus viverrinus* VU). The two globally threatened primates are both endemic to Sri Lanka, and it is still not known where the Lesser Adjutant Stork nests⁴⁰. Globally threatened fauna found in the project seascape include nine species of corals (all VU), Humphead Wrasse (*Cheilinus undulatus* EN), Sperm Whale (*Physeter macrocephalus* VU), Blue Whale

³⁵ <https://rsis.ramsar.org/ris/1910>

³⁶ <https://rsis.ramsar.org/ris/2095>

³⁷ https://www.researchgate.net/publication/327929665_A_review_of_the_genus_Labeo_Teleostei_Cyprinidae_in_Sri_Lanka

³⁸ Two records in Sri Lanka in 1978 and a third, in 2018, from the Project Landscape.

http://indianbirds.in/pdfs/IB_14_4_Darshana_SpoonbilledSandpiper.pdf

³⁹ Endemic to Sri Lanka, quite numerous in the country, but not abundant in the project landscape

⁴⁰ <https://www.wilpattu.com/species-ZebraBlue-35>

(*Balaenoptera musculus* EN), Indian Ocean Humpback Dolphin (*Sousa plumbea* EN), Indo-pacific Finless Porpoise (*Neophocaena phocaenoides* VU), and three species of sea turtles (Olive Ridley Turtle (*Lepidochelys olivacea* VU), Green Turtle (*Chelonia mydas* EN), and Hawksbill (*Eretmochelys imbricata* CR). **Annex U** provides a full list of endemic and globally threatened fauna in the three Trial Landscapes.

34. The basin's importance for biodiversity is indicated by the fact that a remarkable 2,083 km² (35%) of the 5,952 km² landscape selected for project implementation is designated under Forest Department (11%) or Department of Wildlife Conservation (24%) protected area categories and an additional 2.5% has been proposed as Elephant Corridors (Annex Q). Offshore two Dugong and Seagrass conservation areas have also been proposed, amounting to 460 km², which is 53% of the 875 km² seascape selected for project implementation. **Annex U** lists all endemic faunal species recorded in the Trial Landscapes based on literature surveys and additional records made during project preparation surveys.

35. Most of the estimated 240,000 people in the rural areas of the Project landscape are engaged in agriculture and fisheries, and high demand for both cash harvests and subsistence is leading to damaging practices, particularly in fishing (overfishing, dynamiting, reef destruction and bycatch) and in the encroachment of forested state land for cultivation (see **Annex R** for descriptions and **Annex K** for ToC analysis in specific sectors). Poverty is widespread and has been exacerbated by three years of drought and associated crop failures (Annex R, Annex K). Anuradhapura District is particularly badly affected by CKDu⁴¹ and the suffering that has resulted from the deaths of family breadwinners is devastating.

36. A major ADB/GOSL Northern Province Sustainable Fisheries Development Project⁴² aims to shift fisheries offshore and establish safe harbours and landing sites (there are no natural fishery harbours on the coastline of the Northern Province), to expand coastal aquaculture, and to strengthen entrepreneurial skills, market links and credit access for local communities, including women (see Section 4.2). This has been done elsewhere but despite the increase in global fishing effort global landings still show a steady decline⁴³, and fishermen are dropping below poverty levels in many regions of the world⁴⁴. The reductions in fishing capacity required to alleviate the negative impacts of overfishing often result in a loss of fishing access for fishers who may be entirely dependent on marine resources for their livelihood. In places like Mannar, where fishers have fewer economic alternatives, enforcing no fishing areas is difficult, as there are at present insufficient opportunities for people to opt out of fisheries permanently⁴⁵.

37. Fisheries alone will not be able to provide sufficient economic benefits to maintain fishers above local poverty levels, even if sustainably exploited and if fishing effort is kept constant. Addressing fleet overcapacity is a key component of achieving sustainable and economically viable fisheries, but it has to be managed together with other agencies, in recognition that fisheries are part of a complex socio-ecological system, and cannot be considered in isolation⁴⁶.

38. The Blue Swimming Crab (*Portunus armatus*) fishery established in Mannar Bay is on its way to becoming a sustainable fishery⁴⁷. Part of the profits from better management and exclusive access could be collected in the form of taxes or licensing fees to benefit the general public, given that fish are a public resource⁴⁸. The potential of the oceans for wealth creation is being promoted under the Blue Economy framework, which is especially relevant in coastal communities that rely almost exclusively on fishing⁴⁹.

⁴¹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4588322/>

⁴² https://www.np.gov.lk/index.php?option=com_content&view=article&id=4094:review-meetingon-northern-province-sustainable-fisheries-development-project&catid=10&Itemid=117

⁴³ <https://www.nature.com/articles/ncomms10244>

⁴⁴ <https://link.springer.com/article/10.1007%2Fs13131-017-1096-x>

⁴⁵ <https://onlinelibrary.wiley.com/doi/abs/10.1111/faf.12016>

⁴⁶ DOI: 10.1111/faf.12332

⁴⁷ <https://www.seafoodsource.com/features/op-ed-sri-lankan-blue-swimming-crab-fishery-improvement-project-proves-validity-of-fip-model>

⁴⁸ <https://linkinghub.elsevier.com/retrieve/pii/S009506960400138X>

⁴⁹ <https://doi.org/10.1016/j.marpol.2017.03.002>

39. In Mannar, within the Project landscape, ecotourism has the potential to contribute to fishing community economies. There are good examples in the Cabo Pulmo National Park in Mexico⁵⁰, and in the transformation of manta ray fisheries to ecotourism in Western Australia and elsewhere⁵¹. Mangrove restoration provides an opportunity for donors to fund as payments for ecosystem services thus providing incentives for ecosystem protection⁵².

3.4 Trial Landscapes (TL) and Focal Village Clusters (FVC)

40. The overall Project landscape, at nearly 6,000 km² has been divided into three Trial Landscapes in which the project will demonstrate mainstreaming of biodiversity in an integrated, landscape-based approach to natural resource management and tourism. These three Trial Landscapes (TL) were identified based on representativeness of different ecosystems and animal and plant communities, on the potential to mainstream biodiversity into the main production sectors and tourism, and to maximize synergies with related projects and government programmes that overlap geographically and thematically (see Section IV 4.2). The three TLs, with areas of 554,900 and 1,056 km² (Table 1) respectively are the units over which the strategic landscape design and community-centred approach to mainstreaming biodiversity conservation will be piloted. Both inter-agency (cross-sectoral) and inter-administration (cross-jurisdictional) coordination and collaboration will be required. Piloting the required community consultations and joint planning requires further zooming in and focusing on sites of special interest from the points of view of biodiversity and the potential for livelihood adjustments that can demonstrate benefits to local people of conservation actions and gain support for the sustainable approach to natural resource management.

41. Biodiversity and socio-economic surveys in the three TLs and consultations with stakeholders, including local government officials at Provincial, District, Divisional Secretariat, Grama Niladhari Division (GND) and village levels have been carried out during Project preparation. The project will work in close consultations with Grama Niladhari and village communities that are contained within or overlap the sites of greatest interest to develop local land use plans that reflect the overall strategic priorities in the Trial Landscapes. Within each Trial Landscape between four and seven sites of special interest have been identified. They are described according to the GNDs in which they lie. In most cases there is GND per site, but there are usually more than one village in a GND, and some sites overlap up to four GNDs. The sites are referred to under the project as Focal Village Clusters (FVC). Early on in the project implementation, after further surveys and consultations have been completed, two Focal Village Clusters from each Trial Landscape will be selected for detailed community-centred and cross-sectoral land-use planning and livelihood-focused project interventions. In this way the project will follow the mix of community-centred, cross-sectoral and trans-jurisdictional approaches that have been shown to be the most effective in landscape conservation design.

42. The three Trial Landscapes (see Map in Figure 2) and additional maps and descriptions in Annexes L, N, T and R) are as follows:

- **Trial Landscape 1 (TL1):** Maminiya Oya, Upper Kanadara Oya, Upper Weli Oya and Lower Weli Oya sub watersheds of the upper Malwathu Oya Basin.
- **Trial Landscape 2 (TL2):** Lower Malwathu Oya riverine forests including the Mavillu Conservation Forest and other forests connecting the Madhu Road and Wilpattu National Parks and extending to the Giant's tank and its downstream feeder tank system.
- **Trial Landscape 3 (TL3):** The land bordering the Malwathu Oya Estuary, and the adjacent seascape, including coral reefs of Vankalai, Arippu, and Silavaturai, Pearl Banks of Mannar, Cheval Bank and the sea grass beds in shallow coastal seas.

⁵⁰ <https://doi.org/10.1111/conn.12317>

⁵¹ <https://doi.org/10.1016/j.fishres.2012.12.004>

⁵² <https://openknowledge.worldbank.org/bitstream/handle/10986/26843/115545.pdf?sequence=1&isAllowed=y>

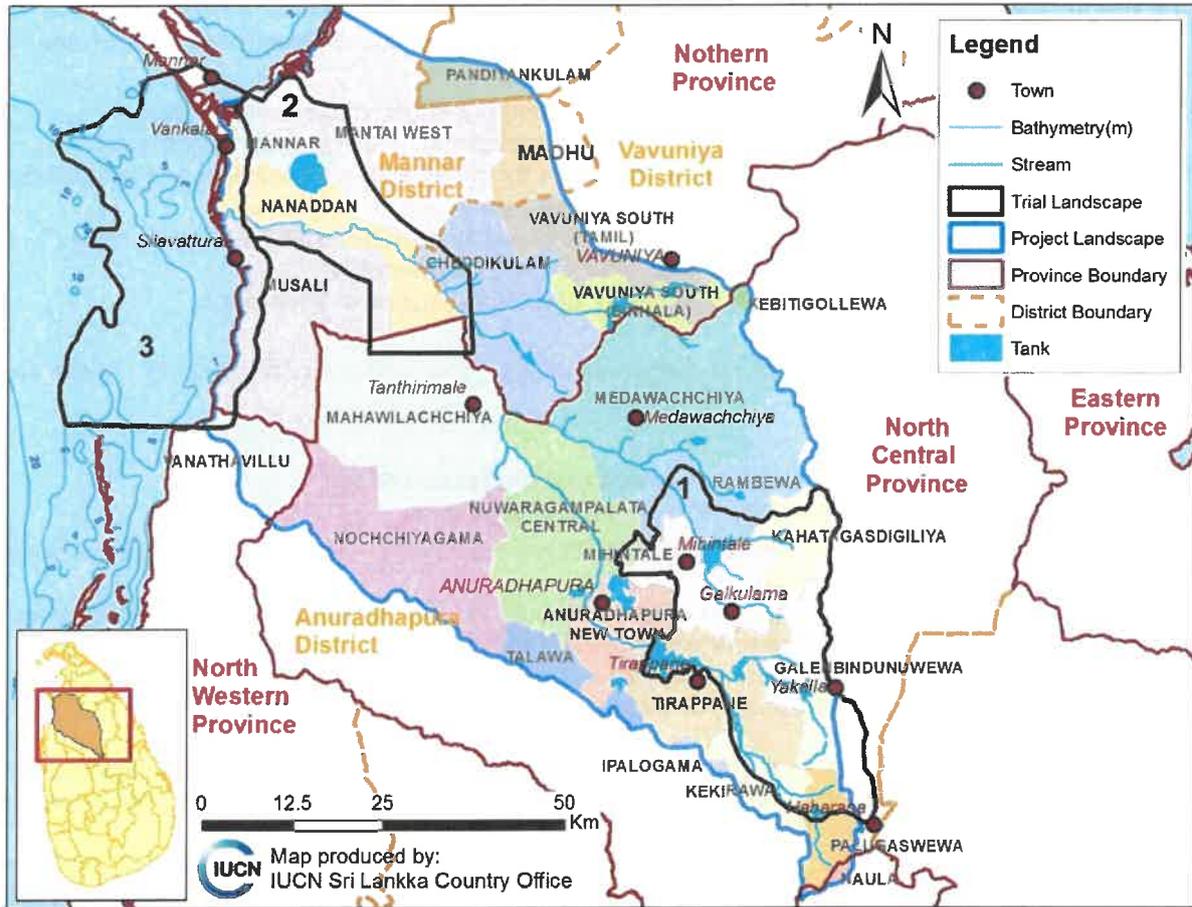


Figure 2: Map of the Project Landscape

Table 1 Trial Landscapes, Districts, DSDs and GN Divisions

| TL | Area in km ² | Approximate human population of each TL | District or districts in which each TL lies | Number of Divisional Secretary's Divisions (DSD) wholly or partially within each TL | Number of Grama Niladhari Divisions (GND) wholly or partially with each TL |
|------------------------|---------------------------|---|---|---|--|
| Upper Malwathu (TL1) | 900 | 150,000 | Anuradhapura | 10 Kekirawa, Thirappane, Mihintale, Rambewa, Kahatagasdigiliya, Galenbindunuwewa, Palugaswewa, Nuwaragampalatha-Central, Nuwaragampalatha-East, Nachchaadowa | 158 |
| Lower Malwathu (TL2) | 554 | 50,000 | Mannar Vavuniya (small part) | 7* Vengala-Cheddikulam, Nanaddan, Madhu, Manthai West, Mahavilachchiya, Musalai, Mannar | 54 |
| Malwathu Estuary (TL3) | 1,056 (land 181, sea 875) | 40,000 | Mannar Puttalam (very small part) | 4* Nanddan, Musalai, Mannar, Vanathavillu | 49 |

* Three DSDs (in italics) overlap TLs 2 and 3 and TLs 2 and 3 also share a common boundary. The main emphasis will be on the marine environment in TL3 and the terrestrial environment in TL2 but there will also be joint planning.

43. Figures 4-6 in Annex S show the Focal Village Clusters (four to seven in each TL) from which the final two FVCs per TL will be selected before Inception.

3.5 Project Components

44. The Project Objective will be realized through the completion of four interrelated and complementary components carried out simultaneously:

- **Component 1:** Institutional capacity building, and enhanced cross-sectoral, trans-jurisdictional and donor agency co-ordination in planning, decision-making and action
- **Component 2:** Design of landscape strategies for biodiversity conservation and sustainable livelihoods and upward integration into existing policy
- **Component 3:** Participatory land-use planning and livelihood-focused interventions to demonstrate socio-economic benefits of biodiversity conservation
- **Component 4:** Monitoring and evaluation, and dissemination of knowledge

Section IV 4.1 gives a breakdown of the results expected - the Outcomes and Outputs - under these Components.

3.6 General principles of project management and implementation:

45. The Project will operate under the following general principles

- Operate within existing policy and institutional frameworks and with reference to existing categories of land protection;
- Keep the scope narrow enough to achieve results during the project period, but wide enough to have continued impact after the end of the project;
- Emphasize the importance of highly qualified and effective project personnel (including, among others, a Project Manager and a Senior Technical Adviser) based full time in the Project landscape;
- The Project Document is not over-prescriptive, thus allowing for adaptive management and maintaining flexibility in activities, including catalyzing conservation and livelihood investments that depend on the results of community and government consultations;
- Demonstrate and publicize Project results to stimulate continuation and replication elsewhere;
- Emphasize short, regular and sustained interactions with local government and community stakeholders⁵³ for the duration of the Project;
- Involve central government in seeking feedback on project reports, in capacity building in different sectors, and in drawing up recommendations for possible policy changes;
- Synergize and collaborate with relevant donor-funded and government-funded projects, in particular the UNDP/GEF/GOSL Environmentally Sensitive Areas project; the ADB/GOSL Northern Provinces Sustainable Fisheries Project and the GIZ/GOSL Management of Wilpattu National Park and Influence Zone Phase 2) (see Section IV 4.2);
- Collaborate with private and public sector partners in order to benefit from local knowledge and steady input of international best practice experience;
- Upward integration of results to established planning frameworks so that Project results feed directly into usual decision-making processes of government, rather than into a standalone strategy;
- Contribute to biodiversity conservation through engagement with donor agencies regarding mainstreaming of biodiversity over entire poverty alleviation and rural development programmes;
- Project staff will be assigned to work full time in each of the Trial Landscapes in order to provide intensity and continuity in the consultative planning processes;
- Take particular care to avoid common pitfalls, or flawed assumptions⁵⁴ in planning livelihood-focused interventions for biodiversity conservation. "Alternative livelihoods", for example, unless well planned, can easily become supplementary sources of income that may even subsidize the original damaging practices;
- Consider economic and non-economic benefits side by side when assessing community outcomes: In an analysis of 34 livelihoods-focused conservation projects, empowerment, security and social network development were more significant short-term outcomes than income generation⁵⁵; and

⁵³

⁵⁴ <https://www.ncbi.nlm.nih.gov/pubmed/26310510>

⁵⁵ <https://www.cambridge.org/core/journals/oryx/article/disentangling-the-links-between-conservation-and-poverty-reduction-in-practice/D60B5A9E113B551E1E45433E1B57E72D>

- Environmental and biodiversity assessment will be required for every project intervention - for those undertaken in the name of conservation just as much as those undertaken for economic development.

IV. Results and Partnerships

4.1. Expected results

46. The project will address the requirements of wild species and humans through a biodiversity mainstreaming and conservation design approach at the landscape scale, accompanied by community-centred land-use planning with livelihood-focused interventions at the village scale. The expected long-term impact of the project is the *reduction of direct threats to biodiversity through improved planning and decision-making in natural resource management and tourism*. By the end of the project (ToC): E1, E2, E3), *mainstreaming of biodiversity conservation will have led to more sustainable practices in agriculture, fisheries, forestry and wildlife conservation, and tourism in the three Trial Landscapes, and will have been reflected upward into District development plans and government decision making*. Capacity in mainstreaming will have been strengthened at national and regional levels and ongoing provision of in-service and pre-service training in government training facilities will have been institutionalized.

47. Biodiversity conservation and agriculture are closely intertwined but have not been linked in the minds of the general public, so a key aspect of mainstreaming biodiversity into agriculture will be increasing the understanding and involvement of people in biodiversity conservation in agricultural landscapes. Appealing to the farmer, or indeed the fisher, to take into account the needs of the international community or the nation for biodiversity conservation provides insufficient incentive for him or her to change damaging practices in favour of biodiversity. The long-term solution is *to establish the policy, market and social conditions under which farmers, fishers and other decision makers take into account impacts on biodiversity including both the importance of biodiversity for their own livelihoods and its importance for the wider public good – finding approaches to biodiversity conservation that link people's own interests and wider biodiversity conservation objectives*.

48. Slow and steady community-centred planning at village and DSD levels, with and without public-private partnerships, will have demonstrated how sound sustainable tourism ventures can provide livelihood benefits based on biodiversity conservation. Innovative approaches to payments for ecosystem services, in mangrove restoration, tourism and fishing for example, will have been demonstrated. Dissemination of Project results and experience will have interested government and others in replicating mainstreaming and landscape-based conservation design in other parts of Sri Lanka. Monitoring of project impacts will continue after the project through a mechanism, designed during the Project, for which ongoing technical and financial support will have been guaranteed by government.

49. The main expected results, or Outcomes, and the intermediate steps or Outputs, required to achieve each Outcome, are listed below under each Component, together with The ToC links at the Overall level (Annex K2, K3) between Outcomes and Pre-conditions, and between the Outputs and Mechanisms or Required Changes. Figure 3 below shows the whole project structure in a single diagram.

50. The Project Document defines Outputs under which activities will be planned. In order to maintain flexibility and to avoid raising expectations of certain interventions that end up not being advisable, the Output descriptions have been kept general. **Annex A** (Multi-year work plan) gives the steps foreseen under each Output, and these indicate the kinds of activities that will be required. Specific interventions linked to livelihoods and ecosystem management will be identified in collaboration with communities and government agencies during various participatory planning processes under the Project.

| PROJECT OUTLINE | | | |
|--|--|--|---|
| Managing together: Integrating community-centered, ecosystem-based approaches into forestry, agriculture and tourism sectors | | | |
| <p>Long term goal Integrated, ecologically sensitive management of natural resources that protects biodiversity, reduces resource conflicts, and maintains ecosystem services. (PIF p12).</p> | | | |
| <p>Immediate objective To strengthen protection of globally significant biodiversity through mainstreaming of conservation and sustainable practices into land use planning and sectoral decision-making in forestry, agriculture and tourism sectors</p> | | | |
| <p>Component 1 Institutional capacity building, and enhanced cross-sectoral, trans-jurisdictional and donor agency co-ordination in planning, decision-making and action</p> | <p>Component 2 Design of landscape strategies for biodiversity conservation and sustainable livelihoods and upward integration into existing policy</p> | <p>Component 3 Participatory land-use planning and livelihood-focused interventions to demonstrate socio-economic benefits of biodiversity conservation</p> | <p>Component 4 Monitoring and evaluation, and dissemination of knowledge</p> |
| <p>Outcome 1: An enabling environment to mainstream integrated approaches into natural resource management in production sectors and landscapes</p> | <p>Outcome 2: Natural resource management, tourism and land use are guided by a strategic design for biodiversity conservation and sustainable livelihoods across multiple jurisdictions in three Trial Landscapes in the Northern and North Central Provinces.</p> | <p>Outcome 3: Biodiversity conservation priorities shape sustainable livelihoods in natural resource management and tourism in six Focal Village Clusters in three Trial Landscapes in the Northern and North Central Provinces.</p> | <p>Outcome 4: Monitoring and evaluation, and dissemination of project methods and results contributes to wider application of landscape approach to mainstreaming of biodiversity</p> |
| <p>Output 1.1 Draft ministerial directives and subsidiary agreements for special working arrangements between government agencies and administrations in the three Trial Landscapes Output 1.2. Integrated Landscape Management and Mainstreaming Modules for institutions offering in-service and pre-service training of state employees Output 1.3. Coordination with the wide range of relevant development projects, programmes, and public and private sector initiatives operating in the same geographical area Output 1.4. Recommendations and proposals for changes in policy, institutions or practice that will be required for replication of the landscape conservation design approach to mainstreaming to the whole Project landscape and nationally</p> | <p>Output 2.1. Public information and involvement programme designed and implemented across all Districts and Divisional Secretariats represented in the Trial Landscapes Output 2.2 Mechanisms for trans-jurisdictional and multi-sectoral consultations in the landscape conservation design process Output 2.3 Strategic conservation designs for each Trial Landscape for incorporation into government decision making and local development plans Output 2.4 Guidelines for mainstreaming biodiversity conservation into natural resource management, tourism and land use planning. Output 2.5 Technical and material support for immediate actions required under the agreed strategic designs</p> | <p>Output 3.1. Public information and involvement programme designed and implemented in the focal village clusters Output 3.2. Participatory mechanisms to bring together community and government stakeholders in a landscape conservation design approach to local land use planning Output 3.3. Collection of biophysical and socio-economic information required for analysis and reference before and during community-centred land-use planning. Output 3.4. Six village cluster land-use plans that provide opportunities for novel or modified livelihoods linked with biodiversity conservation Output 3.5. Technical and material support for livelihood changes under the land-use plans in the fields of tourism and natural resource management</p> | <p>Output 4.1 Monitoring protocols and necessary institutional agreements to assess the impacts of the landscape conservation design and livelihood-focused interventions both during and after the end of the project Output 4.2 Periodic reviews and evaluations of monitoring data collected during the project Output 4.3 Publications, films, exhibitions, databases that publicize the methods used and the results of the project interventions Output 4.4 Organized visits by the public and by national and regional government officials to project sites to demonstrate and explain project activities and achievements Output 4.5 Talks and presentations by project staff in Colombo and in District and Provincial centres to explain project methods and results</p> |

Figure 3: Project structure

Component 1: Institutional capacity building, and enhanced cross-sectoral, trans-jurisdictional and donor agency co-ordination in planning, decision-making and action

Outcome 1: An enabling environment to mainstream integrated approaches into natural resource management in production sectors and landscapes (ToC: P1, P2, P3)

52. Outcome 1 ensures the background conditions necessary to achieve the Project Objective at the field level and subsequently to have the models established at the Project sites (Trial Landscapes) replicated elsewhere. Before the Project even begins, authorization and facilitation from relevant government ministries will be required to arrange the administrative actions and mechanisms involved in cooperation across local government sectors and jurisdictions for the Project's landscape conservation design work, local land-use planning and livelihood-focused interventions.

53. The second main enabling activity will be training of government officials in all relevant sectors at central and local levels so that staff are available both to deliver the project effectively and to roll out Project models regionally and nationally. Third, under this Outcome the Project will initiate and maintain coordination among the large number of other projects and programmes that overlap with it geographically and/or thematically in order to build on progress made already and to take up the obvious opportunities for synergies. A Project Learning and Communications Officer (LCO) will be responsible for keeping track of all stakeholder interactions and the specific publicity and involvement campaigns under Outputs 2.1 and 3.1 described below. The full plan will be developed during the Inception Period, and resources are provided for in the TBWP under full time project staff, and additional costs, including travel, of up to US\$10,000 are allowed for in the M&E budget (para 149). Lastly, although the Project will deliberately avoid involvement from the beginning in policy formulation, towards the end of the Project recommendations will be developed and proposed for changes in policies and established practice that are indicated by results achieved with communities and local government.

54. So achievement of Outcome 1 requires the following intermediate Outputs (see Annex A for timing):

Output 1.1: Draft ministerial directives and subsidiary agreements for special working arrangements between government agencies and administrations in the three Trial Landscapes (ToC:R4)

The project will contribute to drafting of a Cabinet Paper on piloting ecosystem-based INRM approaches in the Project Landscape. Government directives will instruct relevant local government agencies and administrations to collaborate fully with the project over the four years of the project's duration. As the project proceeds, any requirements for legal or administrative changes in procedures will be identified and will become the basis for recommended changes in government planning procedures before trial landscape results start to be replicated elsewhere. There is precedent in the arrangements made for the Integrated Strategic Environmental Assessment of the Northern Province⁵⁶.

55. Output 1.2: Integrated Landscape Management and Mainstreaming Modules for institutions offering in-service and pre-service training of state employees (ToC:M1)

Training will be focused on requirements, and a training needs analysis will be carried out to cover national level requirements on the one hand, and local requirements linked directly to project implementation on the other. An initial TNA for the local planning phase will be followed by a second TNA after the landscape designs have been completed. Activities will be coordinated with the capacity development under the UNDP/GEF MMDE Enhancing Biodiversity Conservation and Sustenance of Ecosystem services in Environmentally Sensitive Areas project (see Section 4.2, Table 2). Training under the project will whenever possible and appropriate be done through an institution under a "training of trainers" and "establishing curriculum" approach, so that the training will be available after the project has been completed. There will be a few cases in which an institutional setting for training will not be practical, and in such cases agricultural and fisheries extension officers will be trained to deliver the training again when necessary.

56. Existing pre-service and in-service training institutions/parent organizations with which the Project will work include Sri Lanka Institute of Development Administration (SLIDA), Sri Lanka Forestry Institute, Agricultural in-service training centres, National Wildlife Training Centre Giritale, Sri Lankan Institute of Tourism & Hotel Management (SLITHM), National Institute of Education (NIE), Universities (in Colombo, Jaffna, Rajarata, Sabaragamuwa and Wayamba), Land Use Policy Planning Division (LUPPD) etc. including their local arms, and the National Aquatic Resources Research and Development Agency (NARA). The Project will also work on course development and delivery with the Coastal Aquaculture Development Training Centre (CADEC) which is to be set up in the Project landscape under the Northern Province Sustainable Fisheries Development Project (see Section IV 4.2). Modules will be designed for existing vocational pre-service and in-service training institutions to familiarize students with the concept and practice of mainstreaming biodiversity and ecosystem services into natural resource management in particular and economic development in general. In-service training will focus on topics that have immediate relevance to the trainees' work. Selection of trainees is important too: one cannot teach anyone to become a trainer: aptitude and interest are essential requisites.

57. Output 1.3: Coordination established/enhanced with relevant development projects, programmes, and public and private sector initiatives operating in the same geographical area (TOC:M7)

The urgent need for biodiversity to be mainstreamed into economic development, and into natural resource management in north-western Sri Lanka in particular, has been widely recognized, and is reflected in a significant number of projects and programmes. There will be mutual benefits for all if coordination can be achieved. Progress towards the MT Project objective will be hastened by effective synergies with such projects and programmes. Every opportunity will be taken also to contribute to biodiversity conservation through engagement with donor agencies, including UNDP, regarding mainstreaming of biodiversity over their entire poverty alleviation and rural development programmes. The immediate target of this output is the establishment of routine meetings at local, district and national levels and regular exchanges of news, results and ideas, jointly and separately, with, among others, the wide range of projects, programmes, and public and private sector initiatives listed in Section IV 4.2. For example, a proposal is already under discussion to coordinate all human-elephant conflict

⁵⁶ https://www.iucn.org/sites/dev/files/content/documents/2017/isea_north_final_report.pdf

interventions in the Anuradhapura district under the ESCAMP, GIZ, ADB and UNDP projects (see Section 4.2 Table 2) through one or more Divisional Secretariat-led sub-committees.

58. Output 1.4: Recommendations and proposals for changes in policy, institutions or practice that will be required for replication of the landscape conservation design approach to mainstreaming to the whole Project landscape and nationally. (ToC: M9)

A deliberate decision has been made to work within existing policy and legislation but to use the Project as a demonstration of the potential of the mainstreaming approach to biodiversity conservation at landscape scales. However, towards the end of the Project recommendations for changes in policy and practice that would facilitate mainstreaming and landscape conservation design will be developed and advocated. This will run simultaneously with an intensive programme including online and print publications, public and private addresses, and field demonstrations aimed at dissemination of project results and persuading or inspiring government to build on those results (See Outcome 4). One potential focus would be to advocate using the status of biodiversity, the environment and ecosystem services, alongside GDP, in performance assessments of local economies, and ultimately the national economy.

59. Cross-border coordination is another possible area for recommendations, specifically in managing the fishing activities of Sri Lankan and Indian vessels. Indian vessels are reported to cause considerable damage to sea bottom habitats and to take a wasteful amount of by-catch, and although it will be beyond the capacity of the Project to make any changes here, the Project should be in a position after 18 months or so to make responsible and well-informed reports and recommendations. As the Trial Landscape conservation designs are finalized and implemented the natural next step will be to scale up to the Overall Project Landscape. Impacts of irrigation projects in particular, such as the Upper Elaheera Canal Project, and the Lower Malwathu Reservoir Project (see Section IV 4.2) will have been the focus of analysis as they affect the TLs, and for that reason, among others, the links and lessons learned will be easier to demonstrate than at the national level. Guidelines on mainstreaming developed under Output 2.4 (see below) will form the basis for recommendations under Output 1.4. The trade-offs between "land sharing" and "land sparing"⁵⁷ for biodiversity conservation and livelihoods in the context of the Project (see under Output 2.4) will be addressed in policy recommendations.

60. Component 2: Design of landscape strategies for biodiversity conservation and sustainable livelihoods and upward integration into existing policy

Outcome 2: Natural resource management, tourism and land use are guided by a strategic design for biodiversity conservation and sustainable livelihoods across multiple jurisdictions in three Trial Landscapes in the Northern and North Central Provinces (ToC: P4, P5).

61. These strategic designs for biodiversity conservation will identify the actual requirements and priorities for biodiversity conservation in each Trial Landscape. These include requirements for habitat connectivity, including for large species such as the Asian Elephant, the Leopard and the Sloth Bear, and potential influences of agricultural and fisheries development, irrigation works such as reservoirs and canals (notably the large Lower Malwathu Oya Reservoir⁵⁸), tank rehabilitation, and road and rail construction. Proposals for additional protected areas, including the potential declaration of parts of the Trial Landscapes as Ecologically/Environmentally Sensitive Areas may be made.

62. Key to the successful achievement of Outcome 2 will be the necessary collaboration across multiple jurisdictions including DSDs, Districts, GNDs and Provincial authorities; a well-informed and supportive public; an inclusive and integrated planning process where conservation agencies and production-oriented agencies design together with communities; and one that provides for additional data collection where required, possibly through carrying capacity assessments and strategic environmental assessments; and an action programme to implement the approved strategy. The results of research (Outputs 2.3 and 3.3) and monitoring (Output 4.1) together will be used to measure and predict the environmental and social impacts of economic development activities and decisions, including trends in agriculture, fisheries, tourism and infrastructure development and to plan project initiatives in

⁵⁷ <http://press-files.anu.edu.au/downloads/press/p346093/pdf/ch09.pdf>

⁵⁸ Malwathu Reservoir

livelihoods and planning guidelines. The strategic designs will feed into work under other development projects, programmes, and public and private sector enterprises in the Trial Landscapes, including interventions on District development strategies, farming and fishing practices, aquaculture and hatcheries, tourism infrastructure and activities, irrigation infrastructure, harbour and landing stage infrastructure, and other local initiatives in landscape approaches to mainstreaming biodiversity.

A full time Senior Technical Advisor will lead the landscape strategic planning for all three Trial Landscapes.

63. Achievement of Outcome 2 requires the following intermediate Outputs (see Annex A for timing):

Output 2.1: Public information and involvement programme designed and implemented across all Districts and Divisional Secretariats represented in the Trial Landscapes (ToC: M2, M9)

A comprehensive public information and involvement programme will be implemented over the whole duration of the project, focused on public involvement in development and implementation of the strategic conservation designs. It will include, among other things, excursions for members of the public to local protected areas, notably the Wilpattu National Park, provision for a Mobile Education Unit - a vehicle that will travel around the three Trial Landscapes to develop a dialogue with people about biodiversity and ecosystem services and well-being, and the relationship between economic development and sustainability of livelihoods based on natural resources. The Project Learning and Communication Officer (LCO) (see Section V and Annexes C and D) will have oversight over this Output and will also be charged with managing the Project's stakeholder engagement plan and implementing the public information and involvement programmes under Outputs 3.1, 4.3, 4.4 and 4.5.

64. The Project office (see Section V) will be developed as a centre of excellence - a place where anyone (private individual, journalist or government official) who wants to know about biodiversity conservation and related issues such as the impacts, causes and the imperative for mitigation of global climate change. There will be provision for public consultation on the draft strategic designs (see Output 2.3).

65. The programme will support a critical approach to interpreting the results of surveys and research and hold workshops for journalists in the Project's overall landscape. Publicity material produced by the Project itself will continue a useful life for several years after the project is completed, but it is equally important for the project to establish the *capacity* to produce new works, to organize new seminars, and to inspire new recruits to conservation. Public information and involvement has to continue after the Project, and the Project will work towards establishing this capacity and ensuring that it is resourced adequately and institutionalized appropriately. Opinion and knowledge surveys will be undertaken, but only after rigorous planning of sampling protocols. A potential partner here is the SUDEESA Mannar training centre facility recently established with assistance from Seacology⁵⁹

66. Output 2.2: Mechanisms for trans-jurisdictional and multi-sectoral consultations in the landscape conservation design established and implemented (ToC: M3, M6)

Progress has been made during the Project Preparation phase on establishing the best "entry points", and the work done so far will be consolidated early in the Project. District and DSD Agriculture Sub-committees have been identified as appropriate starting points, and through them mechanisms will be agreed for cross-sectoral coordination within each hierarchical level, and trans-jurisdictional coordination across neighbouring jurisdictions at the same level, and between higher or lower jurisdictions. A precedent exists in the Anuradhapura District Facilitation Committee established for the UNDP/GEF MMDE Enhancing Biodiversity Conservation and Sustenance of Ecosystem services in Environmentally Sensitive Areas project (referred to below as the GEF-ESA project), and this will be a good starting point in Trial Landscape 1. This preparatory work feeds into decisions on the composition of the core planning teams and the wider partnerships for development of the strategic conservation designs (Output 2.3)

67. Output 2.3: Strategic conservation designs for each Trial Landscape for incorporation into government decision making and local development plans (ToC: M4, M6, M8)

⁵⁹ <https://www.seacology.org/project/sri-lanka-mangrove-conservation-project/>

This output will be delivered following the steps below:

1. Determine the scope of each strategy and prepare full outlines;
2. Decide on core planning teams and wider partnerships for production of each strategic design (see Output 2.2);
3. Negotiate formal agreements with District governments for adoption of the strategic designs in District Development Plans and in decision making processes;
4. Decide on the process for development of each strategic design, and establish a list of assignments with the people responsible and the time table;
5. Involve the public (see Output 2.1);
6. Determine the biophysical and socio-economic information needs, including data on tourism (and actual and potential impacts of various tourism development scenarios), and traditional farming practices (e.g traditional crop varieties) and assess what reliable information is readily available. Any work with databases will also involve preliminary assessment of current availability of data and links with existing databases and compatibility of format;
7. Carry out necessary research and analysis;
8. Develop user friendly GIS maps with advanced tools to facilitate landscape scale planning;
9. Determine current and potential threats and constraints;
10. Analyse consequences of current policies and the level of policy implementation, and recommend changes (alternatives) that could be implemented locally;
11. Define management actions required by responsible agencies and groups to implement recommended alternatives;
12. Identify resource requirements: funds and funding sources, skilled personnel, equipment and facilities, training, public participation in management, information;
13. Develop mechanisms and a timetable for provision of these resources;
14. Prepare a "living document" subject to periodic revisions, for integration into District development plans, other official government plans, and routine decisions in local government; and
15. Allow a review period, before agreement/ratification, during which feedback will be solicited from the public, including community based organizations.

68. Output 2.4: Guidelines for mainstreaming biodiversity conservation into natural resource management, tourism and land use planning (ToC: M3)

Mainstreaming biodiversity into decision making and planning in each Trial Landscape will be part of the strategic design and the basic principles will be established under Output 2.3. Guidelines for sustainable agriculture, fisheries, tourism and other sectors have been developed in Sri Lanka, published and distributed, and more work is being done under the GEF ESA project. However, work during the Project Preparation Phase concluded that clear, concise guidance with a focus on mainstreaming of biodiversity, is still not available and that for the purposes of the Project both generic guidelines and guidelines tailored specifically for the Project Trial Landscapes will be required. Under this Output the initial focus will be on converting the proposals, decisions and recommendations arising from each strategic design into Technical Guidelines with specific local relevance and application. This lies at the heart of the project's selected approach of demonstration. The guidelines for the Trial Landscapes will then, in conjunction with other partners, including the GEF ESA project, be used to build into higher level regulations/practices with a view that these will be incorporated where possible into local, and eventually national, regulations.

69. There will be separate guidelines for a) land use planning, b) tourism, c) infrastructure development, d) agriculture and fisheries e) forestry, and f) protected area management and they will encompass robust consideration in EIA. Development of these guidelines, and their incorporation into higher level policy, will be done in close collaboration with relevant partners and stakeholders, including the GEF ESA project, and there will be different presentations of the same guidelines according to the target audiences, such as government officials, local development projects, community based organizations, and the general public. Sketches and photographs will be used to maximum effect, and short, attractive video presentations will feed into the public information programmes under Outputs 2.1 and 3.1. Consideration under both this Output and Output 2.3 (the actual strategic design) will be given to the arguments that impacts on populations of wild species would be greatly reduced through boosting

yields on existing agricultural land so as to spare remaining natural habitats⁶⁰. Consultations will be held with organizations that are involved with certified or nearly certified sustainable operations in fisheries or in agriculture (with the blue swimming crab fishery⁶¹ for example). The Project will work with other donor-funded projects in natural resource management in the Project landscape to support incorporation of the agreed mainstreaming guidelines into those projects' work plans and *modi operandi*.

70. Output 2.5: Technical and material support for immediate actions required under the agreed strategic designs (ToC: M5)

A deliberate decision has been taken (Section III 3.6) not to define specific immediate actions at the Project preparation stage, because that would pre-empt the strategic design process and its participatory and inclusive nature. Technical and material support to implement the landscape strategies is foreseen in these main areas:

1. Integration of the Strategic Designs (Output 2.3) and the Mainstreaming Guidelines (Output 2.4) into District development plans, routine decision making, local regulations, and proposed actions under donor-supported development projects and programmes.
2. Strategic Environment Assessments (SEAs) conducted in the Trial Landscapes to identify threats and land allocation for conservation, such as elephant corridors, and Environmentally Sensitive Areas for example. Carrying capacity assessments conducted in ESAs selected to promote eco-tourism operations.
3. Monitoring and assessment of direct and indirect impacts on biodiversity of tourist operations and tourist development proposals in order to detect and limit damaging practices through regulation.
4. Achievement of reforestation targets whether through natural regeneration or planting.
5. Testing of green certification for tourist operations, including excursions, restaurants and hotels.
6. Monitoring and assessment of direct and indirect impacts on biodiversity of fisheries, water management, agriculture and forestry, and potential impacts of new development proposals in these sectors, in order to be able to detect and limit damaging practices through regulation.

71. Component 3: Participatory land-use planning and livelihood-focused interventions to demonstrate socio-economic benefits of biodiversity conservation

Outcome 3: Biodiversity conservation priorities shape sustainable livelihoods in natural resource management and tourism in six Focal Village Clusters in three Trial Landscapes in the Northern and North Central Provinces (ToC: P5, P6, P7).

72. Outcome 3 focuses on village level land-use planning using the landscape approach to mainstream biodiversity into local livelihoods, including possibly setting aside land for conservation, and linking social and financial benefits to conservation benefits. Outcomes 2 and 3 will start simultaneously and there will be mutual feedback throughout Project implementation. Strategic decisions at the Trial Landscape planning level regarding the wider landscape will be taken into account at the village and village cluster level. The key to this Outcome will be the slow and steady approach to informing, involving and motivating people in local communities through the posting of Community-based Conservation Experts (CCEs) in each of the three Focal Village Clusters. Success in preparing the land-use plans will depend on a well-informed public that feels involved and consulted, effective mechanisms to bring together community and government stakeholders in detailed local land-use planning and reliable biophysical and socio-economic data. After planning has been completed the project will provide technical and material support for implementation of parts of the plans, in collaboration with local communities and local government agencies.

73. Achievement of Outcome 3 requires the following the following intermediate Outputs (see Annex A for timing):

⁶⁰ eg. Balmford, A. et al. (2018) The environmental costs and benefits of high-yield farming. *Nature Sustainability* 1, 477–485 <https://www.nature.com/articles/s41893-018-0138-5>

⁶¹ <https://www.seafoodsource.com/features/op-ed-sri-lankan-blue-swimming-crab-fishery-improvement-project-proves-validity-of-fip-model>

Output 3.1: Public information and involvement programme designed and implemented in the focal village clusters (ToC: M2)

This Output will in some cases overlap in its activities with Output 2.1, but it has been separated out because the aim is to engage a smaller population, with the focus on the reasons for, and the importance of, village level planning. This Output will involve additional features such as school-based activities that aim to (a) involve and inspire young people in conservation because this can affect attitudes and interests in later life and (b) influence parents through the enthusiasm generated by their children; and ecology and nature-watching clubs outside school that stimulate young people to take an interest in the natural world. Simple projects led by the three full time resident Community-based Conservation Experts (CCEs) to keep bird lists for the local area for example, can be the spark for later attitudes to biodiversity in livelihoods. Excursions will be organized for adults and children from the focal village clusters to local protected areas, including the Wilpattu National Park (as under Output 2.1) and to existing and proposed marine protected areas. Global climate change and its causes will be explained in the context of recent variability in weather locally and globally and implications for the future. The Project's CCEs will be available to guide implementation. The Mobile Education Unit, (see Output 2.1) will visit the focal village clusters with materials targeted specifically at the local community level planning.

74. Output 3.2: Participatory mechanisms to bring together community and government stakeholders in a landscape conservation design approach to local land use planning (ToC:M6)

The resident Community Conservation Experts will guide the planning process including the participation, when required, of experts (in planning processes, biology, sociology and economics), government officials at various levels, and private sector partners that are able and willing to provide backing for livelihood-focused interventions. The main priorities will be for the Project to allow sufficient time, provide sufficient resources, establish working arrangements between government and communities, carry out additional biophysical and socio-economic research as required, engage with a wide range of stakeholders, ensure representativeness on behalf of main interlocutors, and maintain community participation after the plans have been developed. A wide variety of community-based organizations, including farmer, fisher and women's groups, and faith-based groups will be engaged. Formal meetings and workshops will be arranged, but there will be an equal emphasis on developing informal and long term relationships to build up confidence, understanding and ownership of Project aims.

75. Genuine and fully representative participation is required - transparent processes and decision-making structures, frequent community updates, and slow and steady building of trust. The public must believe that their involvement is not merely cosmetic, and that certain decisions are really in their gift. It is important to link conservation with economic benefits, and also with benefits associated with sense of well-being. Many people in the Project landscape are overwhelmed by meeting basic survival needs, so getting people's attention will not be straightforward. Each individual should be listened to, and the Project team will engage with traditionally disempowered groups such as youth and women, and strive to avoid "elite capture"⁶², or the diversion of resources directed towards conservation by elite persons or groups of local residents who thereby frustrate the objectives of conservation. Community empowerment and sense of ownership linked to biodiversity conservation will be built through social development projects of value to all citizens, and the sense of fulfilment and well-being developed through increased confidence and self-reliance.

76. Output 3.3: Biophysical and socio-economic information required for analysis and reference before and during community-centred land-use planning (ToC: M8)

In preparation for the planning process and in order to assist with monitoring progress towards objectives, data collection and analysis will be carried out to record baselines for biodiversity, ecosystem services, agricultural and fisheries practices, the extent, nature and organizers of tourism, and basic socio-economic variables in the FVCs. Stakeholders must be satisfied that accurate biological and socio-economic data are being used in planning, so the results will be published immediately together with initial analyses.

⁶² see for example, Moyo F. et al. (2017) Between Policy Intent and Practice: Negotiating Access to Land and Other Resources in Tanzania's Wildlife Management Areas. *Tropical Conservation Science* Volume 10: 1–17 <https://doi.org/10.1177/1940082917744167>

77. Output 3.4: Six village cluster land-use plans that provide opportunities for novel or modified livelihoods linked with biodiversity conservation (ToC: M4, M6)

Community-centred FVC land-use plans will be prepared along similar lines to the Trial Landscape Strategies described under Output 2.3 but the process will be slower, less bureaucratic, and much more local and time-consuming. The resident Community-based Conservation Experts will be working almost full time on these plans because their everyday interactions with local residents and local government officials (in particular the Grama Niladharis) will contribute to their thinking and subsequent formal planning gatherings. Use will be made of community based three-dimensional mapping techniques for visualization of land use options and ecological flow and impacts⁶³

78. Although community based conservation initiatives ostensibly promote the principles of good governance, transparency, and accountability, they often lead to practices of exclusion: so the Project will guard against this in its capacity as a link to the private sector in tourism for example, ensuring that all local people are able to benefit in some way from major investments in the area. No specific livelihood-focused interventions will be approved for inclusion in the plans until they have been assessed for environmental and socio-economic impacts. Public sector partnerships will be particularly important in Outputs 3.4 and 3.5, and specialist knowledge will be required too, for example in ornithology when developing any interventions in bird tours that would take in additional sites in the three Trial Landscapes (see **Annex N: Tourism in the project landscape, and potential project interventions**).

79. Output 3.5: Livelihood interventions to enhance tourism and natural resource management under the land-use plans prepared and implemented (M5, M7, M8)

A deliberate decision has been taken (Section III 3.6) not to define specific livelihood-focused interventions at the Project preparation stage, because that would pre-empt the planning process and its participatory and inclusive nature. Technical and material support will be given to community members for novel or modified livelihoods in tourism, agriculture, fisheries, forestry and wildlife conservation and that such support will be dependent on screening for environmental and socio-economic impacts, including delayed impacts that might feedback to biodiversity through socio-economic and market changes linked to the intervention. Technical support will include expert analysis of business plans and long term outlooks. Links will be facilitated with private sector investors and market advice will be provided. Training will be provided for specific skills required in novel or modified livelihoods, and for all training carried out under the Project. When such training proves important in achievement of successful livelihood-focused interventions, the Project will work to ensure that similar training is institutionalized locally. It is envisaged that links with the UNDP BIOFIN programme (see Prodoc 4.2) will be taken up for selected interventions in Payments for Ecosystem Services, ecological certification for agricultural produce, harvests of wild plants, fisheries, and tourism operations, premium pricing for traditional varieties of rice, for example, that - a) have sought after flavours and texture and b) require lower inputs of agrochemicals. Conservation agreements, grants and co-management arrangements will also be explored when and where the socio-economic and environmental conditions are suitable. In place of financial compensation for crop damage and loss of livestock to wild animals, the Project will pilot contributions towards the capital costs of well-planned mechanisms (such as elephant fences) to avoid damage in the first place. In such cases contributions, which could be in-kind (generally labour) will be required from the affected people, subject to safeguards such as ascertaining whether the labour being provided is taking people away from other work or from family care and thus increasing hardship unreasonably.

80. Opportunities for livelihood-focused interventions will be identified during planning under Output 3.4. Tourists surveyed in Wilpattu (see Wilpattu NP Management Plan) commented that walking tours would be a welcome addition to the options for nature observation in the area - something that is not possible within the National Park - so this is something that might be built on in the wider landscape where there are attractions for tourists, such as bird-rich patches of habitat. In the Wilpattu Management Plan it is recommended that more women be engaged in tourism and wildlife protection roles because there are many roles, such as driving and guiding that they can perform just as well as men. The project will pursue this recommendation in its livelihood-focused interventions.

⁶³ <http://pubs.iied.org/pdfs/9312IIED.pdf#page=72> (Chapter 11)
<http://wwf.panda.org/homepage.cfm?10641/conservation-goes-3d>

81. Component 4: Monitoring and evaluation, and dissemination of knowledge

Outcome 4: *Monitoring and evaluation, and dissemination of project methods and results contributes to wider application of landscape approach to mainstreaming of biodiversity (ToC: P2)*

82. Outcome 4 covers the monitoring of project results, paying attention to social, economic, environmental and biodiversity impacts, followed by scaling up and dissemination of results and lessons learned. Landscape and livelihoods-based conservation interventions are becoming more and more frequent, but monitoring their long term impacts is lagging behind initiation and implementation of projects. It is important to provide guidance for future interventions that rigorous monitoring of impacts is established and that it continues beyond the normal cycle of 3-5 years. Under this Outcome the post-project monitoring capability will be established; and the results of the project will be disseminated, in publications, through field visits and presentations at the trial landscapes and focal village clusters, and through film and radio and the internet. The Project will increase and widen understanding of mainstreaming and the landscape approach to biodiversity conservation nationally, and lend support to interested individuals by being open to enquiries and requests. The purpose, progress and results of the Project will be publicized to the general public, to government officials, and to intermediaries and partners such as NGOs and journalists. Publications and films will be produced, and the Project will organize a wide range of displays, seminars, Project field visits, and other events and activities for the public and for government officials.

83. As important as training and publicity materials themselves is the confidence and competence of those who will prepare and present them, and lead the overall public information campaigns. Training and publicity materials quickly become dated; they require highly experienced people to take them on, deliver them again, and update or replace them as required. Both human and financial resources are needed here: it is not easy to find someone to head up an effective public information program based on accurate science and wide experience and an extensive support network. The project will include training in public information campaigns for biodiversity conservation under Outcome 1.2, but success in this field is not simply a matter of training: it requires inspiration and natural ability, and the Project aims to identify people able to continue this work during implementation of Outputs 4.3, 4.4 and 4.5.

84. Achievement of Outcome 4 requires the following intermediate Outputs (see **Annex A** for timing):

Output 4.1: Monitoring protocols and necessary institutional agreements to assess the impacts of the landscape conservation design and livelihood-focused interventions both during and after the end of the project (ToC: M9)

This Output will deliver the M&E programme of the Project (see Section VII Monitoring and Evaluation, and Section VI Project Results Framework) and will be completed with required human, financial and institutional resources. This Output will include but go beyond the evaluation of the data collected to track the Core Indicators (**Annex B**) and the indicators in the Project Results Framework (Section VI). It will record progress on, and impacts of, specific project interventions under Outputs 1.2, 1.4, 2.3 and 3.4., to assess effectiveness, and to monitor environmental and social risks (see Annex E and H). A Project Officer has been assigned to monitor risks identified under the Social and Environmental Screening Procedure. Output 4.1 also provides for extended monitoring after the project has ended. An institution will be identified for post-project monitoring, and finance will be arranged. Discussions during Project Preparation indicate that this will be done by establishing a government budget line under the Ministry of Environment and Wildlife Resources.

85. Output 4.2: Periodic reviews and evaluations of monitoring data collected during the project (ToC: M9)

The Project Results Framework (PRF) indicators and Core Indicators will be reviewed at MTR and at the time of preparing the Terminal Report. Other indicators set up under Output 4.1 will be tracked more frequently. See Section VII for full details of the M&E programme.

86. Output 4.3: Publications, films, exhibitions, databases that publicize the methods used and the results of the project interventions (ToC: M2)

The focus under Outputs 4.3, 4.4 and 4.5 will be on Project methods and results and the opportunity will also be taken to inform the public, government officials, NGOs in Sri Lanka and overseas. Links will be formed with similar projects in other countries to exchange news and experience. For example, a Picture Story and video will be prepared in partnership with UNDP Ecosystems and Biodiversity. Databases will be openly available on the Project website, which will be updated daily by the Information and Involvement Officer, who will also handle the Project Twitter feeds and Facebook pages, with reference to other Project staff as required. A quarterly Project Newsletter will report on activities, and will address, through editorials and specialist articles, substantive related conservation issues each month. Publicity materials, particularly those explaining technical aspects of biodiversity conservation will provide resources for teachers and undergraduates and other interested people. Relevant publications, when deemed suitable and effective, will be translated into Tamil and Sinhala for local distribution. The guides to mainstreaming of biodiversity into natural resource management and tourism produced under Output 2.4 will be used at national level to pursue policy changes and policy implementation changes under Output 1.4.

87. Output 4.4: Organized visits by the public and by national and regional government officials to project sites to demonstrate and explain project activities and achievements (ToC: M2)

These visits will be scheduled from start of the Project, so that the whole story can be presented transparently, setbacks and all. Among the early visits will be those by print and media journalists. There is scope under the Project to provide financial support in the form of grants to journalists, writers and film-makers who want to tackle difficult biodiversity-related stories that they would not have the time or funds to report on in their routine work. National and regional government officials will be invited in such a way that they meet officials from other sectors and jurisdictions so that the principles of the landscape approach are stressed. Conservation NGOs, rural development NGOs, bilateral and multilateral aid organizations, private sector companies and consortia will be invited during the second half of the Project when there is more to demonstrate. The Project will be open to taking up opportunities for collaboration with organizations that see opportunities in collaborating with, and even financing of, components of the TL and FVC strategies and plans.

88. Output 4.5: Talks and presentations by project staff in Colombo and in District and Provincial centres to explain project methods and results (ToC: M2)

These talks and presentations will be scheduled from early on during Project implementation. The LCO will take the lead in arranging and planning these events, but the whole project team (see **Annex C**) will be involved in them. Activities will include one-way passing of information, stimulation of interest, dialogue of various kinds, and training for journalists, amateur or novice film-makers and teachers in the basics of mainstreaming, and biodiversity conservation outside protected areas. Biodiversity practitioners and media professionals will be brought together in workshops where the media professionals will learn more about the issues and the conservationists will learn more about how to make their stories more easily be picked up by the media. Regular conservation "salons" will be held, where talks by guest speakers will be followed by discussion sessions. These will target media groups, private sector business groups such as Biodiversity Sri Lanka, Chambers of Commerce and other business organizations, and government officials (in their departments and jointly when possible). These "salons" will be reported on by invited journalists, through TV, radio or in print. The Mobile Education Unit that will tour the Project landscape will be tasked at intervals to travel to Colombo and other selected cities to set up a Project exhibition and to host Project speakers, in key sites, including University campuses and public parks.

4.2 Partnerships

89. Opportunities for synergies will be taken up through careful coordination and pooling of specialist expertise leading to the optimal application of funds and other inputs towards achievement of planned results across all participating projects and programmes. Agreements have been reached with many of the projects and programmes below with regard to common coordination mechanisms and outreach programmes (under Output 1.3). The Project will also build on the results of recently completed projects through working with the organizations and teams that implemented those projects and are familiar with the results, recommendations and the priorities for follow-up.

90. Table 2 summarizes the most relevant partnerships with projects and programmes. More details are provided in **Annex F4**. The Project will benefit from the partnerships and institutional and coordination mechanisms already established by other projects at national and field-level while maintaining its own emphasis on mainstreaming biodiversity into routine decision making and action by government and communities on natural resource management. The partners fall into six main categories according to thematic field. The Project aims to work under existing policy and authorizations and to prepare and lobby for any required policy changes identified during project implementation.

91. The Project will build further on the landscape approach currently being tested in the field through the GEF-5 project on Environmentally Sensitive Areas (**A1 in Table 2**) and on lessons learnt from the upgraded project of the GEF Small Grants Programme (**A3** below). In particular, the Project will partner with the Environmentally Sensitive Areas (ESA) Project (A1) in development of criteria for the new protection designation of ESA, and ESAs will constitute an option for designation in the strategies for the Trial Landscapes.

92. The Project will coordinate closely with projects that overlap geographically with similar activities (e.g. A2, A3, B1, C1 below) in order to maximize potential impact, sustainability and learning. Cooperation arrangements in sustainable tourism and land-use planning have been agreed with the World Bank ESCAMP project (A4 below) and the GIZ Wilpattu National Park and its Influence Zone Project (**B1** below), which will bring in considerable investment, to enable more effective delivery of donor funding in the same and neighbouring landscapes, and to build national capacities and systems for conservation-friendly, culturally sensitive tourism that provides direct benefits to local communities and avoids the damaging environmental and social impacts of tourism seen in many other parts of Sri Lanka⁶⁴.

93. The Project will build strong partnerships with public and private institutions for financing biodiversity conservation building on the analysis and initial pilots of the BIOFIN (Biodiversity Finance Initiative) project (E1 below). BIOFIN provides the potential for Project partnerships with state banks (green financing), tourism establishments (sustainable product and services certification) and for establishing new financing streams through public-private partnerships for bioprospecting, payments for ecosystem services, and offsets. Four recently completed projects (B1, B2, the national level E2 and the regional F1) have been included in **Table 2** in order to ensure that the learning that has accumulated under those projects should be accessed by the MT Project. This is particularly important in the case of the Dugong Project (E2 below).

94. Collaboration with projects in agriculture, irrigation, fisheries and tourism (C1, C2, C3, C4, C5) will comprise sharing of expertise. For example, the Project will work closely with SLTDA as a key partner in ensuring that development of a tourism resort at Giant's Tank⁶⁵ (see C4 below) proceeds with all necessary social, cultural and environmental safeguards, and will perform a similar role with the ADB funded Sustainable Fisheries Project (C1) below. The MT Project will provide biodiversity expertise that will improve environmental performance and enhance the sustainability of development results, and the development projects will provide specialist knowledge to enable proper coordination of livelihood-focused interventions under the MT project.

Table 2: Partnerships and their links to MT Project Theory of Change (ToC) and Outcomes (further details in Annex F)

| A. Mainstreaming biodiversity conservation into development in forest, farming and coastal landscapes | |
|--|--|
| Project or Programme Partner | Links to MT Project |
| A1. UNDP/GEF-5 MMDE Enhancing Biodiversity Conservation and Sustenance of Ecosystem services in Environmentally Sensitive Areas (ESA) ⁶⁶ 2015-2020 | Input to criteria for the new protection designation of ESA, and guidelines on biodiversity-considerations in to production sectors (Outcome 1) Potential establishment of ESAs in the Trial Landscapes (Outcome 2) |

⁶⁴ See Annex N

⁶⁵ <http://www.lankabusinessonline.com/mannar-identified-for-major-tourism-development-ministry/>

⁶⁶ <https://www.thegef.org/project/enhancing-biodiversity-conservation-and-sustenance-ecosystem-services-environmentally>

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| ToC: P2, P3, P1 Project sites in District adjacent to MT Project | Collaboration on capacity building for mainstreaming of biodiversity (Outcome 1) |
| A2. UNEP/GEF-6 MMDE Healthy Landscapes: Managing Agricultural Landscapes in Socio-ecologically Sensitive Areas to Promote Food Security, Well-being and Ecosystem Health (HL) ⁶⁷ 2018-2021 ToC: P6, PA1, PA2, P7, PA4, PA9 Project sites in two village cascade systems that overlap with MT Project TL1 in Anuradhapura District - establishment of six model "eco-villages". | Support from MT project in development of biodiversity criteria and guidelines for mainstreaming into agriculture under the HL project (Outcomes 1, 2. ToC: M7, P6, PA1, PA2) Joint involvement in landscape conservation design (Outcome 2) Collaboration and coordination on livelihood-focused interventions (Outcome 3) Sharing of technical expertise to maximise impacts (Outcome 3) |
| A3. UNDP/GEF Small Grants Programme: Upgrading Country Programmes: Mannar Island to Jaffna Coastal Region Landscape Strategy for Building Social, Economic and Ecological Resilience ⁶⁸ 2017-2021 ToC: P1, P4, P6, Project sites overlap with MT Project in District (Mannar) and DSs (Nanaddan, Mannar, Manthai West, Madhu) | Collaboration on public information and involvement (Outcomes 2, 3) Incorporation of the SGP landscape strategy into the higher level strategy of the MT project (Outcome 2) Coordination with small (up to US\$90,000) grant recipients under the SGP Landscape Strategy, and lessons learned from such community engagement (Outcome 3) |
| A4. World Bank Ecosystem Conservation and Management Project (ESCAMP) ⁶⁹ 2016-2021 ToC: P4, PFW1, PFW7, PT1, PT6, PT9 Project sites in Anuradhapura District overlap slightly with MT Project (eastern side of Trial Landscape 1) | Build on ESCAMP experience on landscape planning and management ^{70,71} (for Outcome 2) Incorporate results in human elephant co-existence (Outcomes 2, 3) Learn from ESCAMP results on protected area-based tourism (Outcome 3) |
| B. Protected area management and focal species projects, including outreach programmes | |
| B1. GIZ / DWLC Supporting Wilpattu National Park and Influence Zone Management in Sri Lanka (WNPISP) ⁷² Phase 1: 2016-2019, Phase 2: 2019-2022 ToC: P4, P5, P6, P7, PFW1, PFW2, PFW5, PFW7, PFW8 PT9 Project sites overlap with MT Project in Districts (Anuradhapura, Mannar and Puttalam) and DSs (Nanaddan, Cheddikulam, Musali, Mahawilachchiya, and Vanathavillu) | Collaboration on public information and involvement (Outcomes 2, 3) Joint involvement in landscape conservation design (Outcome 2) Learn from WNPISP experience in village based development plans (Outcome 3) Coordination with respect to livelihood-focused interventions (Outcome 3) MT Project contributions to Management Planning (Outcome 1) |
| B2. UNEP/GEF Enhancing the Conservation Effectiveness of Seagrass Ecosystems: Supporting Globally Significant Populations of Dugongs Across the Indian and Pacific Ocean Basins ⁷³ (DP) 2014-2018 ToC: P6, PF1, PF6, PF7 Multi-country (8) project: In Sri Lanka, overlap with MT Project in Mannar area | Incorporation of DP recommendations regarding Dugong Conservation and in particular marine protected areas in landscape planning (Outcome 2) Input to guidelines to reduce by-catch of Dugong and establish criteria for fisheries and tourism certification that take into account the risk of Dugong casualties and damaging levels of disturbance (Outcomes 2,3) |
| C. Development of single sectors - fisheries, agriculture (including through irrigation), tourism | |
| C1. ADB/Fisheries Department Northern Province Sustainable Fisheries Development Project ⁷⁴ (NPSFDP) 2018-2024 ToC: P1, P4, P6, PF1, PF3, PF5, PF7 Project sites overlap with MT Project in Mannar District and DSs Nanaddan, Musali, Manthai West and Mannar | Input to training courses (Outcome 1) Support with mainstreaming biodiversity considerations into infrastructure and aquaculture development (Outcome 2) Input to and coordination with alternative livelihood proposals and actions (Outcome 3) Monitoring of impacts (Outcome 4) |

⁶⁷ <https://www.thegef.org/project/healthy-landscapes-managing-agricultural-landscapes-socio-ecologically-sensitive-areas>

⁶⁸ <http://www.gefsgpl.org/GEF-SGP-OPERATIONAL-PHASE%2006English.aspx>

⁶⁹ <https://www.escamp.lk>

⁷⁰ <http://www.dailymirror.lk/142799/A-novel-approach-for-land-use-planning>

⁷¹ http://www.escamp.lk/wp-content/uploads/2017/11/Proceedings-of-the-Stakeholder-Workshop_-_Component-1.pdf

⁷² <https://www.giz.de/en/worldwide/42570.html>

⁷³ <http://www.dugongconservation.org/about/>

⁷⁴ <https://www.adb.org/projects/49325-002/main>

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| <p>C2. ADB/ Irrigation Department Mahaweli Water Security Improvement Project, including Northwestern Province Canal Project (NWPCP) and Upper Elahera Canal Project (UECP)^{75,76} 2015-2024 ToC: P1, P6, PFW7, PA8, PA9 Transfers water from Mahaweli Basin into one of MT Project's Districts (Anuradhapura)</p> | <p>Take into account potential impacts of the project for biodiversity in the Trial Landscapes (Outcome 2) Feedback of biodiversity data and expertise to the UECP (Outcome 1) Coordination under the UECP Wildlife Management Plan, which includes proposals for new protected areas and for human-elephant conflict management and mitigation (Outcome 2)</p> |
| <p>C3. China EXIM Bank/Irrigation Department Lower Malwathu Oya Multi-Purpose Reservoir Project (LMORP)⁷⁷ 2017- At environmental appraisal stage of planning ToC: P1, P2, P3, P5, P7 3.6 km long dam and 7000 ha reservoir in Anuradhapura District, and irrigation canals extend into Mannar District with modifications to the anicut supplying Giant's Tank, which will have domestic water supply and hydropower generation in addition to providing irrigation water.</p> | <p>Consultation and collaboration regarding potential and actual impacts, positive and negative⁷⁸, on biodiversity downstream and upstream, the disruption to ecological flow and the intensification of agriculture in same areas (Outcomes 2, 3)</p> |
| <p>C4. World Bank/Irrigation Department Climate Resilience Improvement Project (CRIP)^{79,80} 2014-2019 ToC: P3, P4, P5, P6 Malwathu Oya included as one of six CRIP focal river basins for study and mitigation of climate change risk</p> | <p>Feedback of biodiversity information to improve models and policy formulation (Outcome 1) Learning from, and collaboration, on landscape designs and integrated NRM, through CRIP river basin vulnerability assessments and CRIP approach to climate resilience (Outcome 2)</p> |
| <p>C5. SLTDA Proposals for development of tourism in Mannar, including at Giant's Tank⁸¹ and Anuradhapura ToC: P4, PT4, PT6, PT9</p> | <p>Collaboration in landscape design and development of guidelines for mainstreaming biodiversity into tourism (Outcome 2) Incorporation of community-based tourism into overall plans through collaboration and demonstration of the benefits (Outcome 3)</p> |
| <p>C6. UNDP/GCF (Green Climate Fund) Strengthening the resilience of smallholder farmers in the Dry Zone to climate variability and extreme events through an integrated approach to water management.^{82,83} 2017-2024 ToC: P1, PA8, PA7, PA9 Malwathu Oya included as one of three GCF focal river basins for irrigation improvements, modified agricultural practices and early warning systems for drought and flood</p> | <p>Exchange of expertise on biodiversity and agriculture (including irrigation) respectively (Outcomes 1, 2) Coordination on livelihood-focused initiatives (Outcome 3)</p> |
| <p>D. District Five Year Development Plans</p> | |
| <p>D1. Under European Union Support to District Development Programme (EU-SDDP)⁸⁴, UNDP oversaw completion of Five Year District Development Programmes (2018-2022) for Anuradhapura⁸⁵, Mannar⁸⁶ and Vavuniya⁸⁷ ToC: P1, P2, P3</p> | <p>This project has terminated but MT project can build on the results</p> |
| <p>E. National level projects</p> | |

⁷⁵ <https://www.adb.org/sites/default/files/project-document/153180/47381-001-eia-01.pdf>

⁷⁶ http://www.mwsip.lk/index.php?option=com_content&view=article&id=5&Itemid=127&lang=en#bmap

⁷⁷ <http://irrigationmin.gov.lk/lower-malwathu-oya-project/>

⁷⁸ <http://www.ft.lk/columns/Lower-Malwathu-Oya-project—A-series-of-misconception-errors/4-639380>

⁷⁹ <http://projects.worldbank.org/P146314?lang=en>

⁸⁰ http://crip.lk/?page_id=862

⁸¹ <http://www.lankabusinessonline.com/mannar-identified-for-major-tourism-development-ministry/>

⁸² https://www.greenclimate.fund/documents/20182/574760/Funding_proposal_-_FP016_-_UNDP_-_Sri_Lanka.pdf/c1054662-d375-46cc-ae57-24f3238eac2f

⁸³ <https://adaptation-undp.org/projects/strengthening-resilience-smallholder-farmers-dry-zone-climate-variability-and-extreme>

⁸⁴ <http://www.lk.undp.org/content/dam/srilanka/docs/general/EU-SDDP%20General%20Brochure%20Revised%20Final%2027%2005%202015%20ENGLISH.pdf>

⁸⁵ <http://www.dailynews.lk/2018/07/16/local/156972/five-year-development-programme-anuradhapura>

⁸⁶ http://www.lk.undp.org/content/srilanka/en/home/library/democratic_governance/The-Five-Year-Mannar-District-Development-Plan.html

⁸⁷ http://www.lk.undp.org/content/srilanka/en/home/library/democratic_governance/The-Five-Year-Vavuniya-District-Development-Plan.html

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| E1. UNDP BIOFIN Biodiversity Finance Initiative ^{88,89} 2016- ToC: P1, P2, P4 | Collaboration on payments for ecosystem services and certification of sustainable tourism (Outcomes 1, 2, 3) Work together on refinement of Financial Needs Assessments for Biodiversity Conservation (Output 1) |
| E2. UNDP/GEF Ensuring Global Environmental Concerns and Best Practices Mainstreamed in the Post-Conflict Rapid Development Process of Sri Lanka through Improved Information Management ⁹⁰ 2014-2017 ToC: P1, P4, P6 | This project has been terminated but MT project can build on results in data management and capacity needs assessments and training activities carried out for planners, policy-makers and decision-makers on national and global environmental issues |
| F. Regional projects | |
| F1. Bay of Bengal Large Marine Ecosystem Project | Good source of material on the ecology of the Gulf of Mannar and possible areas and routes for collaboration with Indian partners ⁹¹ |

4.3 Risks and Assumptions

95. A list of the 12 risks (one of them High Risk, 9 Medium Risk and two Low Risk) associated with the Project is given in **Table 3** together with mitigation measures. Seven Environmental and Social Risks (ESR) were identified through the Social and Environmental Screening Procedure (SESP). One of these (Risk 11) is classified as High: it concerns the possibility that people may be asked or forced to relocate from forest areas designated as Elephant Corridors as part of overall conservation management. No Project funds will be applied directly to implementing any land acquisitions or involuntary relocations, but co-financiers of the Project may well apply their own funds to this. If involuntary relocations are implemented with funding from government or from other donor agencies [eg ADB or World Bank under the UECP (C2 in Table 2) and ESCAMP (A4 in Table 2)] the Project will inevitably be associated with them even though no Project funds would have been allocated. This is because any involuntary relocations that take place within the Trial Landscapes would have been included as integral components of the landscape designs developed as part of Project-funded activities in collaboration with local governments and communities. So the risk is one of association and it is essential that the Project engages with the implementers of any involuntary relocations that are approved under the landscape designs and provides a robust framework to ensure that safeguards satisfy UNDP and GEF standards.

Table 3: Risks and mitigation (see also Annexes H and E)

Note: Red = High Risk, Yellow = Medium Risk, Green = Low Risk

| Description | Type | Impact & Probability | Mitigation measures | Owner |
|-------------|------|----------------------|---------------------|-------|
|-------------|------|----------------------|---------------------|-------|

⁸⁸ <https://www.biodiversityfinance.net/sri-lanka>

⁸⁹ https://www.biodiversityfinance.net/sites/default/files/content/knowledge_products/BIOFIN%20Brochure-%20Summary%20of%20the%20progress.pdf

⁹⁰ <https://www.thegef.org/project/ensuring-global-environmental-concerns-and-best-practices-mainstreamed-post-conflict-rapid>

⁹¹ <http://www.boblme.org/documentRepository/BOBLME-2011-Ecology-21.pdf>

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| <p>Risk 1: Institutional inertia and administrative inflexibility hinders a) cross-sectoral and trans-jurisdictional collaboration b) enhanced implementation of existing legislation to provide necessary back-up for project interventions at village and landscape level c) adoption of policy recommendations and pre-service and in-service training modules d) establishment and financing of post-project monitoring protocol</p> | <p>Political, Regulatory, Financial</p> | <p>P:2 I:4</p> | <p>Project has planned for enabling central government directives (Output 1.1) to support local and district level actions will be monitored, and reinforced where necessary. The project's approach will be slow and patient, with the Project Management Office and full time Project staff based in the project landscape. If progress is insufficient UNDP CO is ready to step in with high level representations and project funding could be suspended according to UNDP-GEF procedures (PIR, MTR).</p> | <p>Project Manager (PM) & Senior Technical Adviser (STA)</p> |
| <p>Risk 2: The other programmes, projects and private-sector enterprises with which the Project has agreed close collaboration under Output 1.3 do not invest sufficient time and other resources in consultations, coordination, communication and cooperation</p> | <p>Operational</p> | <p>P:2 I:4</p> | <p>UNDP will increase communication and involvement with the concerned organizations well before Project Inception so that by the time of Inception there is full understanding of the need for collaboration. The Project will ensure that momentum is maintained, taking the lead whenever necessary to keep links active, interesting and productive. Project Office and project staff based full time in the project Districts will facilitate this.</p> | <p>PM & STA UNDP</p> |
| <p>Risk 3: Public information and involvement programmes are not sustained after the end of the project</p> | <p>Operational</p> | <p>P:3 I:3</p> | <p>Printed and audio-visual (videos, for example) materials for learning and communication are insufficient to ensure continuation of public information and involvement programmes, so the Project will emphasize training in the skills required to develop and deliver them and will work with MMDE to ensure that such capacity is available post-project. BIOFIN is an important partner in this respect.</p> | <p>PM & STA</p> |
| <p>Risk 4: Technological constraints at local level limits use of GIS for the strategic design</p> | <p>Operational</p> | <p>P:3 I:2</p> | <p>The project will use traditional mapping, including 3D modelling, alongside GIS</p> | <p>PM & STA</p> |
| <p>Risk 5: Local residents do not feel sufficiently involved and valued, are skeptical as a result of being exposed other projects that led to unrealistic expectations, and find that the Project's livelihood-focused interventions produce results too slowly to persuade people to continue with changed behaviour beyond the end of the project</p> | <p>Social, Operational</p> | <p>P:2 I:3</p> | <p>The Project will monitor feelings of involvement, strengthen public information and involvement programmes as appropriate (e.g. arrange visits between focal and non-focal Village Clusters), and modify the participatory methods if indicated. The full-time resident staff in each of the three Trial Landscapes will communicate constantly, and will demonstrate an environmentally friendly, sometimes self-sacrificing, approach by establishing a low carbon footprint - low use of plastics, sensible use of fuel and electricity, attention to sewage and solid waste disposal in project operations.</p> | <p>PM & STA</p> |

| RISKS IDENTIFIED BY THE SOCIAL AND ENVIRONMENTAL SCREENING PROCEDURE (ANNEX E) | | | | |
|---|--------------------------|---------|---|--|
| Risk 6: Livelihood-focused interventions might have deleterious impacts on wild species or habitats in protected areas or areas proposed for protection or recognized as environmentally sensitive or critical | Social, Environmental | P:2 I:4 | Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ToC: M8). All project interventions will be developed through long and careful participatory processes with local government, village communities and with partner projects and programmes (see III Strategy). Care will be taken to avoid inadvertent impacts on key habitats and species through encouraging influx of people to the sites of livelihood-focused interventions. | CO Project Officer and Project Safeguards Officer |
| Risk 7: Reforestation interventions, whether through natural regeneration or planting, are poorly planned and implemented | Social, Environmental | P:1 I:3 | Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ToC: M8). Expert consultation with foresters on the relative merits of natural regeneration and various possible planting regimes considering water availability and the use to which the forest will be put (e.g. wildlife habitat). | CO Project Officer and Project Safeguards Officer |
| Risk 8: Livelihood-focused interventions in fisheries or aquaculture lead to damage to species or habitats | Social, Environmental | P:2 I:4 | Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ToC: M8). All project interventions will be developed through long and careful participatory processes with local government, village communities and with partner projects and programmes (see III Strategy). | CO Project Officer and Project Safeguards Officer |
| Risk 9: Livelihood-focused interventions in non-timber forest products, <i>in-situ</i> or <i>ex-situ</i> , lead to damage to species or habitats | Social and Environmental | P:3 I:3 | See management measures under Risk 3 | CO Project Officer and Project Safeguards Officer. |
| Risk 10: Communities vary of tourism as a livelihood citing possible adverse impacts on cultural values | Social and Environmental | P:2 I:3 | On the one hand there will be long and careful discussions with the local people before the project invests in any new tourism development. On the other hand, the project will be very circumspect in its engagement with private enterprise partners to ensure that such partners are genuinely committed to developing enterprises that will provide benefits in the long term through stabilizing impacts of local livelihoods on species and habitats. | CO Project Officer and Project Safeguards Officer |

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| <p>Risk 11: In order to implement the Project's landscape conservation strategic designs, government decides on involuntary resettlement of people from proposed elephant corridors and other forest areas.</p> | <p>Social and Environmental</p> | <p>P:3 I:4</p> | <p>The actual risk involved with this project is not involuntary resettlement per se but the impact created by physical displacement being undertaken by other agencies within the project's area of influence. The MT project will have to plan accordingly (e.g. engage with other agencies to ensure that the resettlement risks are being appropriately addressed/managed in a manner consistent with the SES). Further the scale of involuntary resettlement would be limited to less than 25 families living in one elephant corridor and therefore the impact would be minimal.</p> <p>It is impossible to predict a) whether resettlements will be required, and b) where and how many people might be involved but a clear course of action is laid down in case resettlements become the preferred course of action (see Annex E).</p> <p>In view of these circumstances it is clear that the risks of deleterious impacts arising from poorly implemented involuntary relocations taking place in the Trial Landscapes must be addressed proactively. The Project will concentrate on finding solutions that provide for elephant conservation at the same time as ensuring the well-being of local residents and, in particular, avoid involuntary, or indeed voluntary, resettlement. If and when it is decided to pursue any resettlement, or endorse it by association, a full ESIA will be carried out (see end of Annex E) according to standards established in The Sri Lankan National Involuntary Resettlement Policy (NIRP) 2001⁹² OP 4.12, UNDP Social and Environmental Standards (SES)⁹³, and the updated GEF policy on environmental and social safeguards⁹⁴.</p> <p>In the meantime, the project will include as part of its already planned extensive community engagement a process for vetting options on addressing human-elephant conflict issues, which may include community-determined restrictions on natural resource access and potential</p> | <p>CO Project Officer and Project Safeguards Officer</p> |
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| | | | voluntary relocation agreements where appropriate. | |
| Risk 12: Participation in community-based planning and implementation is dominated by people from traditionally empowered groups and under-represents women and other marginalized people, including those facing uncertain futures as a result, for example, of poverty, the recent three year drought, and land-tenure disputes | Social | P:1 I:3 | Project staff will be well trained in community-centred participatory processes and will live on site full time in the communities they are working with, thus building up understanding of social pressures and how to address them in the context of the project. Participatory mechanisms will be slow in pace and will focus on ensuring that there is no "elite capture" of community benefits, and that traditionally less-empowered groups of society are engaged. | CO Project Officer and Project Safeguards Officer |

96. The overall SESP risk categorization for the project is High'. Notably, Principle 1 on human rights and standard 5 on displacement and resettlement, have been triggered with a high risk because one of the project sites fall within the proposed elephant corridors, and people may be asked or forced to relocate from forest areas designated as Elephant Corridors as part of overall conservation management. Normally an Environmental and Social Impact Assessment (ESIA) is required for all risks arising from the SESP that are classified as High. This has not been done yet - a) as explained in paragraph 95, and Table 3 above, Project funds will not be used for relocation; b) the number of people that might be affected is not yet known; and c) the second part of Annex E guarantees that an ESIA will be performed if resettlement of people is proposed in the Trial Landscapes whether or not the MT Project is involved in actual funding, because the MT Project will by default be associated with such an action as the landscape designs will identify the forest/wildlife corridors. The mitigation measures detailed (Table 3 and Annex H) also state that all possible alternative solutions will be explored as part of the Landscape Strategies for Trial Landscapes 2 and 3 under the MT Project, before resettlement is recommended under the Project's landscape planning activities. Standards will match or exceed those established in the Sri Lankan National Involuntary Resettlement Policy (NIRP) 2001⁹⁵ the World Bank OP 4.12⁹⁶, and UNDP Social and Environmental Standards (SES)⁹⁷.

97. Further assessment of Risk 11 will be undertaken during project implementation. Project activities contributing to these risks will not commence until the assessments have been completed and any required risk management plans have been approved and are under implementation. Assessment and management planning will involve public consultation and public disclosure.

98. Other environmental and social risks (Risks 6,8,9) arise because many livelihood interventions, however well planned, end up with unintended and damaging consequences, both ecological and social. Risk 7 (see Table 3) concerns poor implementation of reforestation which often fails as a result of poor execution and contingency planning. Mitigation of these four risks will be by way of thorough planning, and patient and unhurried consultations and engagement with communities and local government carried out by project staff based full time in the Project Landscapes. The Project Office, manned by a full time staff - Project Manager, Senior Technical Adviser, Information and Involvement Officer, Landscape Conservation Design Expert and administrative officers (see below under Section V, and Annexes C and D) will be in Mannar, and three Community-based Conservation Experts will live and work full time in Focal Villages, one in each of the three Trial Landscapes. There will be a mix of local appointments and appointments from outside the region.

99. As with all projects that seek to engage with communities and with local governments to improve long term well-being and achieve sustainable lifestyles by paying now for benefits later, there are risks

⁹⁵ <http://www.treasury.gov.lk/documents/10181/272149/RPF-NAPPP+-+For+disclosure.pdf/aa720af8-413f-4394-9ec7-1693ff487bc3>

⁹⁶ <https://policies.worldbank.org/sites/ppf3/PPFDocuments/090224b0822f8a4f.pdf>

⁹⁷ <http://www.undp.org/content/undp/en/home/librarypage/operations1/undp-social-and-environmental-standards.html>

associated with the very mechanisms used. Community participation is in general only successful when sufficient time is allowed, when attention is paid to ensuring equitable representation and impartial facilitation. Project time scales are short, and pressure to start interventions sometimes overrides the good intentions to continue relationship building and participatory planning long enough to achieve genuinely shared goals (Risks 2, 5, 12). Governments at all levels are under pressure to raise revenue in the short term and often feel conflicted when asked to hold back economic development now in the expectation of higher benefits in the future. Central and local governments may genuinely believe in and subscribe to conservation projects but succumb to economic and political pressures and the inertia of business as usual and pull back from genuine support to such projects just when they really need it (Risks 1, 3, 4, 5).

100. The remaining risks concern engagement with partners (described in Table 2) who are vital for Project success (Risk 2), and internal project management commitment to following up on monitoring (Risk 1). Mitigation for both these risks is via pro-active measures taken and emphasized from well before project Inception by UNDP, the Implementing Partner and Senior Supplier. Falling behind on maintaining good coordination with other projects and programmes has compounded risks, in lost opportunities to improve biodiversity mainstreaming into development projects in agriculture, forestry, tourism, irrigation and fisheries (see C1 to C6, and D1 in Table 2 above). As an example the NPSFP (C1 in Table 2) will build harbours and landing stages and support the establishment of alternative livelihoods to reduce impacts of fishing on marine fish and invertebrate populations. The MT Project will work together with this US\$201 million project⁹⁸ to ensure that environmental and biodiversity considerations are mainstreamed into activities that have been recognized as potentially damaging⁹⁹.

101. The risks associated with aquaculture in the Indian Ocean, the South China Sea and the Pacific Ocean, for example, have been well documented^{100, 101} and the sustainable development of the proposed sea-cucumber and mud-crab hatcheries, including on the Gulf of Mannar coast just west of Mannar, depend on learning from such experience elsewhere. It is highly likely that unless offtake is extremely low, and variable, and therefore not interesting to the Chinese commercially, there will be overharvesting and perhaps local extinction of the species of sea cucumber being harvested. This has already occurred where Chinese-led overexploitation of sea cucumbers has happened^{102, 103} and could have knock on effects on the reefs due to the ecological roles of holothurians^{40, 41, 104}. The MT project is well placed to add value and stability to such interventions through collaboration during planning and implementation and also through direct contributions to the teaching and curriculum development at the proposed Coastal Aquaculture Development and Training Centre just north of Puliantivu on the Mannar Peninsula.

102. Major assumptions, therefore, are that

- the Implementing Partner, MMDE, will ensure that all necessary authorizations to work with local governments in the Trial Landscapes and the overall Landscape are forthcoming before the date of CEO endorsement so that progress can be made on recruitment, fielding of staff, detailed work-planning and finalization of any outstanding indicator baselines before the Inception Workshop.
- government maintains support for the project throughout regardless of periods of political unrest.

⁹⁸ <https://www.adb.org/sites/default/files/project-documents/49325/49325-001-tacr-en.pdf>

⁹⁹ The NPSFP PPTA includes reference to the inherent risks to biodiversity and ecosystem services of project interventions, including damage to coral reefs, from construction and dredging waste disposal, shore instability from maintenance dredging operations, deleterious impacts of increased fishing effort as a result of greater harbour capacity Coastal aquaculture is a promising area for sustainable livelihoods, but the environmental and social risks require careful consideration as detailed plans for the aquaculture and livelihood activities are developed.

¹⁰⁰ <https://www.ncbi.nlm.nih.gov/pubmed/22083524>

¹⁰¹ http://www.kpress.info/index.php?option=com_content&view=article&id=559%3Asea-cucumbers-play-key-ecological-roles-in-the-marine-environment&catid=8%3Anews&Itemid=103

¹⁰² https://spccfpstore1.blob.core.windows.net/digitallibrary-docs/files/ce/ce37e510ee90077bdf2a03c7f308d1e2.pdf?sv=2015-12-11&sr=b&sig=0v8xKM2K2QOQFRxS9bjJIsDkbFlkIpDPGag4%2Fohb71%3D&se=2019-07-18T12%3A33%3A55Z&sp=r&rscc=public%2C%20max-age%3D864000%2C%20max-stale%3D86400&rsct=application%2Fpdf&rscd=inline%3B%20filename%3D%22FishNews138_28_Boom.pdf%22search%2Fse

¹⁰³ <http://www.worldfishcenter.org/content/chinese-market-drives-demand-overexploited-sea-cucumber>

¹⁰⁴ https://epubs.scu.edu.au/esm_pubs/1494/

- competent staff are recruited and based full time in the project landscape and the focal villages.
- engagement with communities and local government is slow, thorough and equitable.
- thorough environmental, biodiversity and social assessment of all Project interventions takes place before they are approved.
- satisfactory collaboration is maintained with all stakeholders and partner projects and programmes.

103. Grievance Redressal Mechanism: In line with UNDP standard procedures, the Project will set up and manage a grievance redress mechanism (GRM) as recommended by UNDP (2014) that would address project affected persons' (PAP) grievances, complaints, and suggestions.

4.4 Stakeholder engagement plan:

104. Annex F1 lists the main organizational stakeholders, their normal roles and responsibilities and their relationship and/or participation with the MT Project. There are a large number, as would be expected in a Project entitled Managing Together and with the aim of "mainstreaming" biodiversity into natural resource management and tourism. The main groups are: a) national level government b) training organizations c) local government d) private sector and trade organizations e) civil society organizations. In addition to organizations there are individual stakeholders who have or may have in the future an interest in the Project. Gender specific stakeholder analysis is given in Annex F2.

105. The Learning and Communication Officer (LCO), based in Mannar, will be responsible for maintaining a Stakeholder Coordination Framework (SHF) that summarizes interests, communications and engagements, and ongoing collaboration with details of mutual feedback and leveraged actions. Based on this a more detailed Stakeholder Engagement Plan will be prepared, covering all stakeholders under the following categories:

- National Government Ministries and Departments
- Local Government administrations
- Local Residents acting independently of any organization
- National Civil Society/Non-Governmental Organizations,
- Local Civil Society/Non-Governmental Organizations
- Military and civil law enforcement agencies
- General Public outside the local area
- Lenders and donors to international development projects
- Universities and other places of learning and research

106. The LCO will plan in detail how stakeholders will be informed, consulted, included in participatory planning for biodiversity (and gender) mainstreaming, involved in the screening of potential Project interventions and given specific responsibilities (including contracts) as part of the overall Project team. The LCO will also be responsible for soliciting and dealing with complaints and grievances against the Project from stakeholders with specific concerns.

107. Selected stakeholders will be invited to Project Inception Workshops, which, following the pattern of consultation and dialogue established during Project Preparation will be held at different levels - in Colombo, in two District centres and in the three Trial Landscapes. Under its Communication and Knowledge Management Strategy the Project will ensure that there is common understanding of the Project's Objective and Outcomes and the methods to be used to achieve them. Dialogue between the Project and stakeholders is vital for the success of the project. New stakeholders will be identified as the Project progresses. Stakeholder engagement is open-ended and unpredictable and is expected to contribute to adaptive management of the Project. Regular (at least quarterly) Joint and individual meetings will be held with stakeholders not routinely involved in Project activities.

108. The project will reach common understanding with local communities and local government through a slow but steady process of dialogue and discussion. Patient listening to the concerns and interests of people in local communities and local government will lead on to establishing genuine dialogue on the Project's aims and expected results, and the desires, aspirations and needs of local

people and government. Once common ground has been established the next step will be to ensure that the Objective and scope of the project are fully understood and accepted, and that false expectations of project results are not built up. Project staff at the beginning, and throughout, will concentrate on listening and learning, accepting differences and building mutual trust, challenging their own and others' assumptions through dialogue.

4.5 Gender equality and empowering women:

109. Women play important but undervalued roles in local communities (see **Annex G – Gender Analysis and action plan, and ToC**). Men dominate in fishing livelihoods (ToC: SF8) - the only female boat owners are those whose husbands have died. In farming, women work mainly on vegetable cultivation and they gather NTFPs in remaining forest patches in order to maintain viable family livelihoods. Women are paid less than men for casual labour: there is about 50% discrepancy in the fishing sector, with women allocated work in mending nets and drying fish. Recent years of drought have made it more difficult to provide for families, and malnutrition is reported in some Trial Landscapes (**Annex G**).

110. Women often lag behind in being kept informed on current issues and they are not routinely involved in decision-making fora despite recent legislative changes to advance women's representation. Violence against women is a general malaise in the Project areas and child pregnancies, and employment of children (for example in sand-mining ToC: SFW8) are common. Access to vocational training and technology is biased towards men, thus exacerbating a situation in which women play subordinate roles and are not equitably represented in jobs and local decision making. Women have a great deal of local knowledge that can be utilized towards conservation.

111. The Project will follow an affirmative action path because a passive approach of an equitable approach to participation based on qualifications for example, is unlikely to unlock the potential of women participants to break through traditional barriers and become involved in decision making and livelihood modifications. This can result in lasting change in their roles together with real conservation benefits. Project interventions focused on tourism and sustainable land and forest management will provide new opportunities for employment and income stability for the local community, and women in particular will contribute to improving the quality of life of the local communities in parallel with biodiversity benefits.

112. Specific attention will be focused on ensuring the active participation of women, particularly in the livelihood-focused interventions. During project implementation, capacity building and training will ensure that women as well as men are actively engaged in all aspects of the Project, and that there is a bias towards women in participation - potentially in local tourism businesses for example. Local women's organizations (see above under Stakeholder Engagement (Section 4.4 and **Annex F**) will work with the Project to advance these aims. The slow and steady process of capacity building and community mobilization in the Focal Village Clusters (Output 3.2) will include focus on self-help and building of self-confidence among women, and ways in which family commitments can be combined with enhanced participation in society and in steering communities towards sustainable solutions.

113. The Gender Analysis and Gender Action Plan are presented in **Annex G**, and the Stakeholder Engagement Plan with respect to Gender is given in **Annex F2**

4.6 South-South and Triangular Cooperation (SSTrC):

114. The Project put great emphasis on tracking the successes and failures, the lessons learned, in similar projects focused on mainstreaming and community-centred landscape planning approaches to biodiversity conservation both in the region and elsewhere. The conditions of rural poverty and the requirements for resilience in the face of drought make South-South comparisons and mutual learning particularly relevant. The Project will share experiences, ideas and best practices on issues related to sustainable development and climate change and improving access to information and decision making roles in rural communities in particular. Monitoring and evaluation of this type of project, particularly long-term post project (see Section II 2.2) has not been good, and this Project will help to remedy that.

115. Various fora exist for exchanges of information and lessons learned in sustainable development and biodiversity conservation. The UNDP Ecosystems and Biodiversity¹⁰⁵ post success stories that help to link to promising projects, and UNESCO's Man and the Biosphere Programme provides a good platform for cooperation on research and development, capacity building and networking to share information, knowledge and experiences on a number of issues relevant to the MT Project. It is of no concern that the Project landscape does not fall into a Biosphere Reserve (although the Hurulu Reserve adjoins TL1). The MAB National Committee in Colombo will be involved in making links under the Ecological Sciences for Sustainable Development programme. The Senior Technical Advisor will be responsible for maintaining links within and outside these fora, and keeping attention at all times on the methods being used and progress and intermediate results.

116. The Project will learn in particular from projects and programmes in South Asia, with Government Forest Institutes a potential route for exchange. Community conservation in Nepal, and payments from eco-tourism being used to reduce impacts of local people on natural habitats have been particularly promising^{106,107}, and after initial exchanges of information exchange visits for government staff and community members may be arranged. Other initiatives, notably in the Philippines and Indonesia, on scaling-up innovative financing models for biodiversity conservation will be followed and may be incorporated into Project interventions. The project will exchange information with tourism promoters and regulators, for example in Costa Rica and Bhutan, to build on small scale, low impact, high value infrastructure and services for nature-based tourism that does not result in capture of the benefits by major tour operators and the relative deprivation of benefits among local residents. The experience of Sikkim in trying to establish the State as an organic agriculture state will be examined with its benefits, problems (e.g. reluctance of consumers to pay premium prices) and tradeoffs^{108,109}.

4.7 Sustainability and Scaling Up:

117. The Project is designed to provide demonstrations of community-centred ecosystem-based approaches to biodiversity conservation and sustainable livelihoods in the Trial Landscapes and the Focal Village Clusters within those landscapes. The Project deliberately focuses at the local level working within existing policy, drawing and gaining the attention of government, the public, CSOs and the press throughout implementation. Towards the end of the Project the results, methods used, and lessons learned will be distilled into - a) recommendations for changes in policy and practice that will facilitate the successful approaches, and b) guidance for replication of those approaches, regionally and nationally.

118. Capacity building under the MT project deliberately focuses on institutionalization so sustainability and the potential for scaling up is built in. Public information and involvement programmes too will be built with a focus on finding institutions and personnel capable of continuing the work after the Project has finished. As long as the Project achieves success, ensuring that details of methods, activities, impacts and lessons learned at the demonstration sites are disseminated widely will facilitate replication, sustainability and scaling up.

119. The Project's livelihood-focused investments aim to form bonds between the private sector and communities. Biodiversity Sri Lanka¹¹⁰ has already formed an ecotourism group, members of which are interested in establishing eco-tourism businesses in the northern region according to good corporate environmental and social responsibility criteria.

120. Interventions via communities and local government into natural resource management by their very nature take a long time to take full effect, and certainly longer than the 4 year project duration, so tracking of Project impacts past Project termination, provided for under Outcome 4, is extremely important. Under Outcome 4 - full reporting of all project results and lessons learned will be made in a

¹⁰⁵ http://www.undp.org/content/undp/en/home/librarypage/environment-energy/ecosystems_and_biodiversity.html

¹⁰⁶ <http://siteresources.worldbank.org/INTBIODIVERSITY/Resources/ReducingThreats-web.pdf>

¹⁰⁷ https://www.academia.edu/6952610/LOCAL_PERCEPTION_TOWARDS_VILLAGE_TOURISM_A_Case_Study_of_Sauraha_Village_in_Chitwan

¹⁰⁸ <https://www.sikkimorganicmission.gov.in>

¹⁰⁹ <https://www.theguardian.com/global-development/2017/jan/31/sikkim-india-organic-revolution-at-risk-as-local-consumers-fail-to-buy-into-project>

¹¹⁰ <https://biodiversitysrilanka.org>

range of media, and links will be made to international fora, including through participation in regional and international workshops, conferences and field visits

121. Financial mechanisms, where necessary to sustain Project results, will be developed in conjunction with BIOFIN. Part of the Project approach here will be in seeking increased government funding for biodiversity conservation on the basis of savings made in other sectors as a result of the mainstreaming and landscape strategy approach. Both economic and non-economic benefits of biodiversity for communities will be assessed.¹¹¹ Financial Sustainability at local government level will be achieved partly by being very careful to operate on sustainable budgets in the first place. The Project's operating model will keep costs as low as possible thus showing that only limited additional funds are required to follow the landscape conservation design approach.

122. By working with partner projects and programmes and through them with donors and collaborating government agencies (see Section IV 4.2) the Project will exert influence not only on implementation of those projects and programmes but also on projects in the pipeline and not yet conceived.

123. At the local level it is intended that the Trial Landscape Strategic Designs will feed into District Development Plans and the normal mechanisms of decision making in local government, whatever they may be. In this way those designs and subsidiary plans and interventions will be formalized into routine governance. At the national level it is also intended that Project findings are incorporated into programmes for implementation of the National Biodiversity Strategic Action Plan (NBSAP) and other national plans and strategies, such as the National Physical Plan¹¹² and the Open Government Partnership National Action Plan¹¹³.

¹¹¹ An Evaluation of Economic and Non-economic Techniques for Assessing the Importance of Biodiversity to People in Developing Countries.

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjz55buzdvfAhUzt3EKHbptAYAQFjAAegQICRAC&url=http%3A%2F%2Fsciencesearch.defra.gov.uk%2FDocument.aspx%3FDocument%3DWC0709_7562_FRP.pdf&u sg=AOvVaw2h2u65ja-zPPILH-qhFQTo

¹¹² http://www.acesl.org/download/conference/tp_Lakshman%20Jayasekera%20and%20Veranjan%20Kurukulasuriya.pdf

¹¹³ a) <https://www.opengovpartnership.org/stories/sri-lanka-commits-addressing-wide-range-of-open-government-issues-implementation-found> b) <https://www.opengovpartnership.org/documents/sri-lanka-national-action-plan-2016-2018>

V. Project Management

124. The Project has been designed to be cost-efficient and effective. In this case they go together. Placing the project office in Mannar, near the Trial Landscapes puts it in easy daily reach of the majority of its stakeholders and enables it to employ local people with good knowledge and contacts. It also saves time on travel, and money on travel and everyday office expenses when compared with the option of periodic visits of Project staff from Colombo. Experience in GEF projects in other countries bear this out. UNDP will be the Implementing Agency and will be responsible for supervision, project monitoring and guidance of project activities through technical backstopping. IUCN will implement the Project day to day under the overall direction of the Project Director appointed by the MMDE (see Section VIII Governance and Management Arrangements below). The IUCN office in Colombo will be the national base of the Project but the Project staff will all be based in Mannar and in the Trial Landscapes (see Annexes C and D).

125. A Project Manager, Senior Technical Adviser (STA), Learning and Communications Officer (LCO) and Safeguards and Monitoring Officer (SMO) will be based in the Mannar Office, within or near the Mannar District Government building, and close links will be maintained with the District Government staff allowing on-the-job training to take place through working together. Three Community-based Conservation Experts (CCE) will be engaged to live and work in the Focal Village Clusters because that is the only way that the Project will be able to carry forward its aim of establishing genuine participation in its biodiversity conservation initiatives. Volunteers from the Project area and from Colombo and other cities will be encouraged if they have skills and enthusiasm in the right balance. Specialist biodiversity experts visiting the north for fieldwork will be encouraged to use the Project office and it is the intention to establish the Project office as a centre of excellence - a place where anyone (private individual, journalist or government official) who wants to know about biodiversity conservation in the northern provinces automatically refers. Other project staff and consultants are described in **Annex C**, with detailed TOR for full time staff in **Annex D**.

126. As Responsible Party for project implementation, IUCN will be advanced funds and will apply them to Project activities according to pre-agreed quarterly work plans focused on the Outputs. An international consultant (7 months) and eight to ten national consultants (total 36 person months) are planned (see Annexes C and D).

127. Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information: To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the logos of the Government of Sri Lanka, UNDP and IUCN, on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy¹¹⁴ and the GEF policy on public involvement¹¹⁵.

¹¹⁴ See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

¹¹⁵ See https://www.thegef.org/gef/policies_guidelines

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| | <p>Indicator 2 (Ref: GEF Core Indicator 1.1): The number of people, disaggregated by gender, that have benefited either monetarily or non-monetarily, or both, from project-induced changes in livelihoods.</p> | <p>Male 0 Female 0</p> | <p>Male 500 Female 500</p> | <p>Male 1,600 Female 1,600</p> | <p>the time of project inception.</p> <p>Participatory Rural Appraisal (PRA) and including interviews and direct observations</p> <p>Risks: Difficulties in establishing clear criteria for who is a beneficiary prove too great</p> <p>Assumptions: PRA carried out throughout the project by project staff resident in the Trial Landscapes</p> |
| <p>Outcome 1</p> <p>An enabling environment to mainstream integrated approaches into natural resource management in</p> | <p>Indicator 3 (Ref: GEF Core Indicator 3.1): Area of tropical dry forest and mangrove in the three Trial Landscapes restored and rehabilitated under a landscape conservation design (hectares)</p> | <p>0 ha</p> | <p>6,000</p> <p>Tropical Dry Forest:</p> <p>TL1 2,500 TL2 3,000 TL 3 500 Mangrove TL3 20</p> | <p>21,000</p> <p>Tropical Dry Forest:</p> <p>TL1 8,950 TL2 8,950 TL 3 3,000 Mangrove TL3 100</p> | <p>Surveys and project reports</p> <p>Risks: Political will, both at national and sub-national levels is insufficient to drive the landscape approach forward</p> <p>Assumptions: Ministry of Environment and Wildlife Resources builds the necessary support for the project by the time of inception.</p> |
| | <p>Output 1.1: Draft ministerial directives and subsidiary agreements for special working arrangements between government agencies and administrations in the three Trial Landscapes</p> <p>Output 1.2: Integrated Landscape Management and Mainstreaming Modules for institutions offering in-service and pre-service training of state employees</p> <p>Output 1.3: Coordination established with relevant development projects, programmes, and public and private sector initiatives operating in the same geographical area</p> | | | | |

VI Project Results Framework

| <p>This project will contribute to the following Sustainable Development Goal (s):</p> <ul style="list-style-type: none"> - Goal 12: Ensure sustainable consumption and production patterns - Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. - Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss <p>This project will contribute to the following country outcome included in the UNDAF/Country Programme Document:</p> <ul style="list-style-type: none"> - Driver 4: Enhancing Resilience to Climate Change and Disasters and Strengthening Environmental Management: <i>By 2022, people in Sri Lanka, in particular the vulnerable and marginalized are more resilient to climate change and natural disasters and benefit from increasingly sustainable management of natural resources, better environmental governance and blue/green development</i> <p>This project will be linked to the following output of the UNDP Strategic Plan:</p> <ul style="list-style-type: none"> - Signature solution 4: <i>Promote nature-based solutions for a sustainable planet.</i> - Output 1.4.1: Solutions scaled up for sustainable management of natural resources, including sustainable commodities and green and inclusive value chains. | | | | | | |
|---|---|----------------------------|--|--|--|---|
| Objective and Outcome Indicators | Baseline | Mid-term Target | End of Project Target | Data Collection Methods and Risks/Assumptions | | |
| <p>Project Objective:</p> <p>To strengthen protection of globally significant biodiversity through mainstreaming of conservation and sustainable practices into land use planning and sectoral decision making in forestry, agriculture and tourism sectors</p> | <p>Indicator 1 (Ref. GEF Core Indicators 4 & 5): Area of land and marine habitat administered under a landscape conservation design that mainstreams biodiversity conservation into natural resource management (hectares)</p> | <p>Land 0</p> <p>Sea 0</p> | <p>Land 80,000</p> <p>(TL1 44,000 + TL2 27,000 + TL3 9,000)</p> <p>Marine (TL3) 20,000</p> | <p>Land 155,000 ha</p> <p>(TL1 87,000 + TL2 53,000 + TL3 15,000)</p> <p>Marine (TL3) 55,000</p> | <p>DSD and District Coordinating Committee Meeting Minutes</p> <p>Draft and Final Strategic Design</p> | <p>Risks: Political will, both at national and sub-national levels is insufficient to drive the landscape approach forward</p> <p>Assumptions: Ministry of Environment and Wildlife Resources builds the necessary support for the project's marine and terrestrial work in the three Trial Landscapes by</p> |

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| production sectors and landscapes | Output 1.4: Recommendations and proposals for changes in policy, institutions or practice that will be required for replication of the landscape conservation design approach to mainstreaming nationally. | | | | Copies of the curricula of the training institutions |
| | Indicator 4: Number of sectoral and vocational training institutions that have adopted modules on mainstreaming of biodiversity into natural resource management, tourism and other economic development | 0 | 4 | 9 | |
| | Indicator 5: Capacity of institutions as measured by the UNDP's Capacity Development Scorecard | District 18/45 Division 14/45 | District 22/45 Divisional 17/45 | District 30/45 Divisional 30/45 | <p>Communication with the relevant institutions and application of the Scorecard modified to deal with the aspects relevant to mainstreaming</p> <p>Risks: Some of the aspects of the Scorecard not attributable to the project (could modify the Scorecard at Inception to tackle this)</p> <p>Assumptions: Institutions collaborate with project</p> |
| Outcome 2: Natural resource management, tourism and land use are guided by a strategic design for biodiversity conservation and sustainable livelihoods | <p>Output 2.1: Public information and involvement programme designed and implemented across all Districts and Divisional Secretariats represented in the Trial Landscapes</p> <p>Output 2.2: Mechanisms for trans-jurisdictional and multi-sectoral consultations in the landscape conservation design established and implemented</p> <p>Output 2.3: Strategic conservation designs for each Trial Landscape for incorporation into government decision making and local development plans</p> | | | | |

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| <p>across multiple jurisdictions in three Trial Landscapes in the Northern and North Central Provinces.</p> | <p>Output 2.4: Guidelines for mainstreaming biodiversity conservation into natural resource management, tourism and land use planning.</p> <p>Output 2.5: Technical and material support for immediate actions required under the agreed strategic designs</p> | | | <p>Decisions verified at Provincial Government level</p> |
| | <p>Indicator 6 (Ref. GEF Core Indicator 4.1): Area of High Conservation Value Forest that is under improved management to benefit biodiversity under landscape conservation designs in the three Trial Landscapes (hectares)</p> <p><i>(equivalent to GEF Core Indicator 4.1 but excluding the 1,219 ha of Forest Plantation)</i></p> | <p>0</p> | <p>0</p> | <p>18,824</p> |
| <p>Indicator 7: Annual percentage of Minor and Major Permit applications in which biodiversity impact criteria used in decisions by Coast Conservation Department in Trial Landscape 3</p> | <p>[To be determined for the preceding twelve months before Inception]</p> | <p>Increase on baseline to be determined by Inception (depending on baseline value)</p> | <p>Increase on baseline to be determined by Inception (depending on baseline value)</p> | <p>Examination of applications and judgements/ responses.</p> <p>See: http://www.coastal.gov.lk/downloads/pdf/Permit%20Guideline.pdf and http://cmsdata.iucn.org/downloads/proceedings_of_the_workshop_on_ecological_considerations_in_coastal_development.pdf (page 58)</p> <p>Risks: Ambiguity in the documentation</p> <p>Assumptions: Access to all required documentation</p> |

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| | <p>Indicator 8: Mean score (+/- SD) on a standard environmental/biodiversity impact assessment score card modified for the project, of tourism operations (a) marine-based (b) land-based in the three Trial Landscapes</p> | <p>To be established by Inception</p> <p>889,058</p> | <p>To be established by Inception</p> <p>889,058</p> | <p>To be established by Inception</p> | <p>Scorecard completed by independent consultant</p> <p>Risks: Unexpected difficulties on the application of the scorecard</p> <p>Assumptions: (i) Good cooperation from local communities in answering questions and providing information.</p> <p>(ii) Adequate time assigned for verification</p> |
| | <p>Indicator 9: Estimate of the annual amount of carbon (tCO₂eq) sequestered/ emissions avoided over the twenty years following the project's inception taking into account progress on the development, adoption, and implementation of the strategic designs at the heart of the project.</p> | <p>889,058</p> | <p>889,058</p> | | <p>Recalculation with updated information according to the approach in Annex B</p> <p>Risks: Inherent uncertainties about future events</p> <p>Assumptions:</p> <p>Targets based on the assumption that the strategic design is adopted (Baseline and Mid-term estimates) and followed (End of Project estimate).</p> <p>Good cooperation with communities and local government, and thorough marine and terrestrial surveys and</p> |

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| <p>Outcome 3 Biodiversity conservation priorities shape sustainable livelihoods in natural resource management and tourism in six Focal Village Clusters in three Trial Landscapes in the Northern and North Central Provinces.</p> | <p>Output 3.1: Public information and involvement programme designed and implemented in the focal village clusters Output 3.2: Participatory mechanisms to bring together community and government stakeholders in a landscape conservation design approach to local land use planning Output 3.3: Biophysical and socio-economic information required for analysis and reference before and during community-centred land-use planning. Output 3.4: Six village cluster land-use plans that provide opportunities for novel or modified livelihoods linked with biodiversity conservation Output 3.5: Livelihood interventions to enhance tourism and natural resource management under the land-use plans developed and implemented</p> | <p>Likely to be zero - to be measured by inception</p> | <p>15,000</p> | <p>50,406</p> | <p>The area of land reaching threshold selected on scorecard . See Annex Z and Bucket et al. 2006 https://www.researchgate.net/publication/237228931_UNDERSTANDING_ECOAGRICULTURE_A_FRAMEWORK_FOR_MEASURING_LANDSCAPE_PERFORMANCE)</p> | <p>mapping/satellite imagery analysis</p> |
| | <p>Indicator 10 (Ref. Core indicator 4.3): Area of land in production systems under sustainable land management compatible with biodiversity conservation (hectares)</p> | | | | <p>Risks: Unexpected difficulties on the application of the scorecard Assumptions: (i) Good cooperation from local communities in answering questions and providing information. (ii) Adequate time assigned for verification</p> | |
| | <p>Indicator 11: Number of new instances each year of major coral damage along a 1km reef transect in Trial Landscape 3</p> | <p>Measured after one year against baseline condition</p> | <p>Decrease on baseline by 10%</p> | <p>Decrease on baseline by 30%</p> | | <p>Standard fixed transect survey Risks: The standard fixed transect is left untouched</p> |

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| | | <p>measured by inception</p> | | | <p>simply to achieve a good score on the indicator</p> <p>Assumptions: The assessment will be done by an independent diving team without broadcasting the links to the indicator</p> |
| <p>Indicator 12: Percentage of interviewees disaggregated by gender in Focal Villages who say that livelihoods have been enhanced as a result of mainstreaming biodiversity into land-use plans</p> | <p>0 (men) 0 (women)</p> | <p>20% (men) 20% (women)</p> | <p>50% (men) 50% (women)</p> | <p>Interviews with sound sampling protocols</p> <p>Risks: Sampling problems make comparisons invalid</p> <p>Assumptions: Well-designed polling.</p> <p>Honest answers from interviewees</p> | <p>Interviews with sound sampling protocols</p> <p>Risks: Sampling problems make comparisons invalid</p> <p>Assumptions: Well-designed polling.</p> <p>Honest answers from interviewees</p> |
| <p>Indicator 13: Percentage of key government and community organizations that publicly endorse and commit to each of the six village-cluster land-use plans</p> | <p>Plan 1: 0 Plan 2: 0 Plan 3: 0 Plan 4: 0 Plan 5: 0 Plan 6: 0</p> | <p>Plan 1: 30 Plan 2: 30 Plan 3: 30 Plan 4: 30 Plan 5: 30 Plan 6: 30</p> | <p>Plan 1: 60 Plan 2: 60 Plan 3: 60 Plan 4: 60 Plan 5: 60 Plan 6: 60</p> | <p>Minutes of meetings, publications and official documents issued</p> <p>Risks: Sampling problems invalidate the results</p> <p>Assumptions: (i) Expertly designed protocols (ii) Good collaboration from respondents for interviews and honest replies</p> | <p>Minutes of meetings, publications and official documents issued</p> <p>Risks: Sampling problems invalidate the results</p> <p>Assumptions: (i) Expertly designed protocols (ii) Good collaboration from respondents for interviews and honest replies</p> |
| <p>Indicator 14: Policy, community readiness for sustainable tourism in the Focal Village Clusters measured by Scorecard in Annex Y</p> | <p>To be determined at inception - score out of total 205</p> | <p>Increase of 15% on baseline score out of 205</p> | <p>Increase of 35% on baseline score out of 205</p> | <p>Scorecard completed by independent consultant</p> <p>Risks: Unexpected difficulties in the</p> | <p>Scorecard completed by independent consultant</p> <p>Risks: Unexpected difficulties in the</p> |

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| | | | | | <p>application of the scorecard</p> <p>Assumptions: (i) Good cooperation from interlocutors in answering questions and providing information.</p> <p>(ii) Adequate time assigned for verification</p> |
| <p>Outcome 4</p> <p>Monitoring and evaluation, and dissemination of knowledge of project methods and results contributes to wider application of landscape approach to mainstreaming of biodiversity</p> | <p>Output 4.1: Monitoring protocols and necessary institutional agreements to assess the impacts of the landscape conservation design and livelihood-focused interventions both during and after the end of the project</p> <p>Output 4.2: Periodic reviews and evaluations of monitoring data collected during the project</p> <p>Output 4.3: Publications, films, exhibitions, databases that publicize the methods used and the results of the project interventions</p> <p>Output 4.4: Organized visits by the public and by national and regional government officials to project sites to demonstrate and explain project activities and achievements</p> <p>Output 4.5: Talks and presentations by project staff in Colombo and in District and Provincial centres to explain project methods and results</p> <p>Indicator 15: Number of (a) villages and (b) DSDs in which independent monitoring of project impacts is taking place according to sound protocols</p> | <p>(a) 0</p> <p>(b) 0</p> | <p>To be determined by Inception based on numbers of villages in Focal Village Clusters</p> | <p>To be determined by Inception, based on numbers of villages in Focal Village Clusters</p> | <p>Interviews and demonstrations from those doing monitoring</p> <p>Risks: Wide range of protocols with wide range of credibility</p> <p>Assumptions: Sufficient time allowed</p> <p>Measures of website traffic, search results on project name, social media reach and engagement.</p> <p>Lists of grey and published literature</p> |
| <p>Indicator 16: Number of substantial knowledge products that reflect best practices and lessons learned including project results and sustainability strategy.</p> | <p>0</p> | <p>22</p> | <p>42</p> | <p>Measures of website traffic, search results on project name, social media reach and engagement.</p> <p>Lists of grey and published literature</p> | |

VII Monitoring and Evaluation (M&E) Plan

128. The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results. *Supported by Component/Outcome Four: Knowledge Management and M&E, the project monitoring and evaluation plan will also facilitate learning and ensure knowledge is shared and widely disseminated to support the scaling up and replication of project results.*

129. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP and UNDP Evaluation Policy](#). The UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additional mandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the [GEF M&E policy](#) and other relevant GEF policies¹¹⁶.

130. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the **MoE&WR**– the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The GEF Operational Focal Point (**MoE&WR**) will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Core Indicators) across all GEF-financed projects in the country. This could be achieved for example by using one national institute to complete the GEF Core Indicators for all GEF-financed projects in the country, including projects supported by other GEF Agencies.¹¹⁷

M&E Oversight and monitoring responsibilities:

131. **Project Manager:** The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Board, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

132. The Project Manager will develop annual work plans based on the multi-year work plan included in Annex A, including annual output targets to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. ESMP, gender action plan, stakeholder engagement plan etc..) occur on a regular basis.

133. **Project Board:** The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

134. **Project Implementing Partner:** The Implementing Partner is responsible for providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes, and is aligned with national systems so that the data used and generated by the project supports national systems.

135. **UNDP Country Office:** The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The annual supervision missions will take place according

¹¹⁶ See https://www.thegef.org/gef/policies_guidelines

¹¹⁷ See https://www.thegef.org/gef/gef_agencies

to the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and Project Board within one month of the mission. The UNDP Country Office will initiate and organize key GEF M&E activities including the annual GEF PIR, the *independent mid-term review* and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

136. The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the UNDP POPP. This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the Project Manager.

137. The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

138. UNDP-GEF Unit: Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.

Additional GEF monitoring and reporting requirements:

140. Inception Workshop and Report: A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:

- a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project strategy and implementation;
- b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
- c) Review the results framework and finalize the indicators, means of verification and monitoring plan;
- d) Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP in M&E;
- e) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; SESP, Environmental and Social Management Plan and other safeguard requirements; project grievance mechanisms; the gender strategy; the knowledge management strategy, and other relevant strategies;
- f) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and
- g) Plan and schedule Project Board meetings and finalize the first year annual work plan.

141. The Project Manager will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board.

142. GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Advisor will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Manager will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. The PIR submitted to the GEF will be shared with the Project Board. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

143. Lessons learned and knowledge generation: Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other

networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

144. **GEF Core Indicators:** The baseline/CEO Endorsement GEF Core Indicators – submitted as **Annex B** to this project document – will be updated by the Project Manager/Team (not the evaluation consultants hired to undertake the MTR or the TE) and shared with *the* mid-term review consultants and terminal evaluation consultants before the required review/evaluation missions take place. The updated Core Indicator measures will be submitted to the GEF along with the completed Mid-term Review report and Terminal Evaluation report.

145. **Independent Mid-term Review (MTR):** An independent mid-term review process will begin after the second PIR has been submitted to the GEF, and the MTR report will be submitted to the GEF in the same year as the 3rd PIR. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center \(ERC\)](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate. The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by 19 April 2022. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report's completion.

146. **Terminal Evaluation (TE):** An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Manager will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board. The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by 19 January 2024. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report's completion.

147. The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP IEO will undertake a quality assessment and validate the findings and ratings in the TE report, and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

148. **Final Report:** The project's terminal PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

149. Mandatory GEF M&E Requirements and M&E Budget:

| GEF M&E requirements | Primary responsibility | Indicative costs to be charged to the Project Budget ¹¹⁸ (US\$) | | Time frame |
|--|---|--|--------------|--|
| | | GEF grant | Co-financing | |
| Inception Workshop | UNDP Country Office | 3,300 | 500 | Within two months of project document signature |
| Inception Report | Project Manager | - | None | Within two weeks of inception workshop |
| Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP | UNDP Country Office | - | None | Quarterly, annually |
| Risk management | Project Manager Country Office | - | None | Quarterly, annually |
| Monitoring of indicators in project results framework | Project Manager | 13,500 | | Annually before PIR |
| Baseline establishment for the PRF | Project Manager CO | 8,000 | 2,500 | Before project inception/Y1 |
| GEF Project Implementation Report (PIR) | Project Manager and UNDP Country Office and UNDP-GEF team | None | None | Annually |
| Lessons learned and knowledge generation | Project Manager | 34,000 | 4,000 | Annually |
| Monitoring of environmental and social risks, and corresponding management plans as relevant | Project Manager | 12,500 | None | On-going |
| | UNDP Country Office | | | |
| Stakeholder Engagement Plan | Project Manager | None | None | Completed at the CEO endorsement stage |
| | UNDP Country Office | | | |
| Gender Action Plan | Project Manager | 10,000 | 2500 | On-going |
| | UNDP Country Office | | | |
| | UNDP GEF team | | | |
| Addressing environmental and social grievances | Project Manager | 20,000 | 20,000 | On-going |
| | UNDP Country Office | | | |
| Project Board meetings | Project Board | 1,500 | 500 | At minimum annually |
| | UNDP Country Office | | | |
| | Project Manager | | | |
| Supervision missions | UNDP Country Office | None ¹¹⁹ | add | Annually |
| Oversight missions | UNDP-GEF team | None | add | Troubleshooting as needed |
| GEF Secretariat learning missions/site visits | UNDP Country Office and Project Manager and UNDP-GEF team | - | None | To be determined. |
| Mid-term GEF core indicator to be updated by | Project Manager | | none | Before mid-term review mission takes place. |
| Independent Mid-term Review (MTR) and management response | UNDP Country Office and Project team and UNDP-GEF team | 20,000 | none | Between 2 nd and 3 rd PIR. |
| Terminal GEF core indicator to be updated | Project Manager | none | none | Before terminal evaluation mission takes place |

¹¹⁸ Excluding project team staff time and UNDP staff time and travel expenses.

¹¹⁹ The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GEF Agency Fee.

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|---|--|----------------|---------------|--|
| Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response | UNDP Country Office and Project team and UNDP-GEF team | 35,000 | <i>none</i> | At least three months before operational closure |
| TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses | | 157,800 | 30,000 | |

VIII Governance and Management Arrangements

150. **Roles and responsibilities of the project's governance mechanism:** The project will be implemented following UNDP's national implementation modality, according to the Standard Basic Assistance Agreement¹²⁰ between UNDP and the Government of Sri Lanka, and the Country Programme Document agreed with Government¹²¹.

151. The **Implementing Partner** for this project is the Ministry of Environment and Wildlife Resources (MoEWR). The Implementing Partner is responsible and accountable for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources. The Implementing Partner is responsible for:

- Approving and signing the multiyear workplan;
- Approving and signing the combined delivery report at the end of the year; and,
- Signing the financial report or the funding authorization and certificate of expenditures.

152. The IUCN Sri Lanka will be appointed as a Responsible Party to provide project implementation support as agreed in the GEF OFP endorsement letter **and deliver technical outputs and project activities, identified in the Total Budget and Work Plan**¹²². Project implementation support will be carried out under the overall supervision of a **Project Director (PD)** appointed by the **Executive**, with the agreement of the **Project Board**. Implementation support will be coordinated through a **Project Management Unit (PMU)** that will be field based and hired by IUCN. GEF project funds will be transferred to IUCN Sri Lanka for the use by the PMU, based on the Annual Work Plan (AWP). IUCN Sri Lanka will be responsible for preparation of required financial and narrative reports as required in Responsible Party Agreement. MoEWR may implement direct contracts/subcontracting arrangements with consultants, contractors and other **Responsible Parties**.

153. The **Project Board** will be chaired by the **Executive**. The Project Board (also called Project Steering Committee) is responsible for making, by consensus, management decisions when guidance is required by the Project Manager, including recommendations for UNDP/Implementing Partner approval of project plans and revisions, and addressing any project level grievances. In order to ensure UNDP's ultimate accountability, Project Board decisions will be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Programme Manager. The Project Board plays a critical role in project monitoring and evaluations by providing quality assurance and using evaluations for performance improvement, accountability, and learning. It ensures that required resources are committed, arbitrates on any conflicts within the project, and negotiates solutions in case of any problems with external bodies. The Project Board also approves the appointment and responsibilities of the Project Director and the Project Manager, and any delegation of its Project Assurance responsibilities.

154. Terms of Reference for the **Project Board** are given in **Annex D**; specific responsibilities include

- Provide overall guidance and direction to the Project, ensuring it remains within any specified constraints;
- Address Project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible countermeasures and management actions to address specific risks;
- Review project progress, and provide direction and recommendations to ensure that the agreed results are delivered satisfactorily, employing adaptive management when appropriate

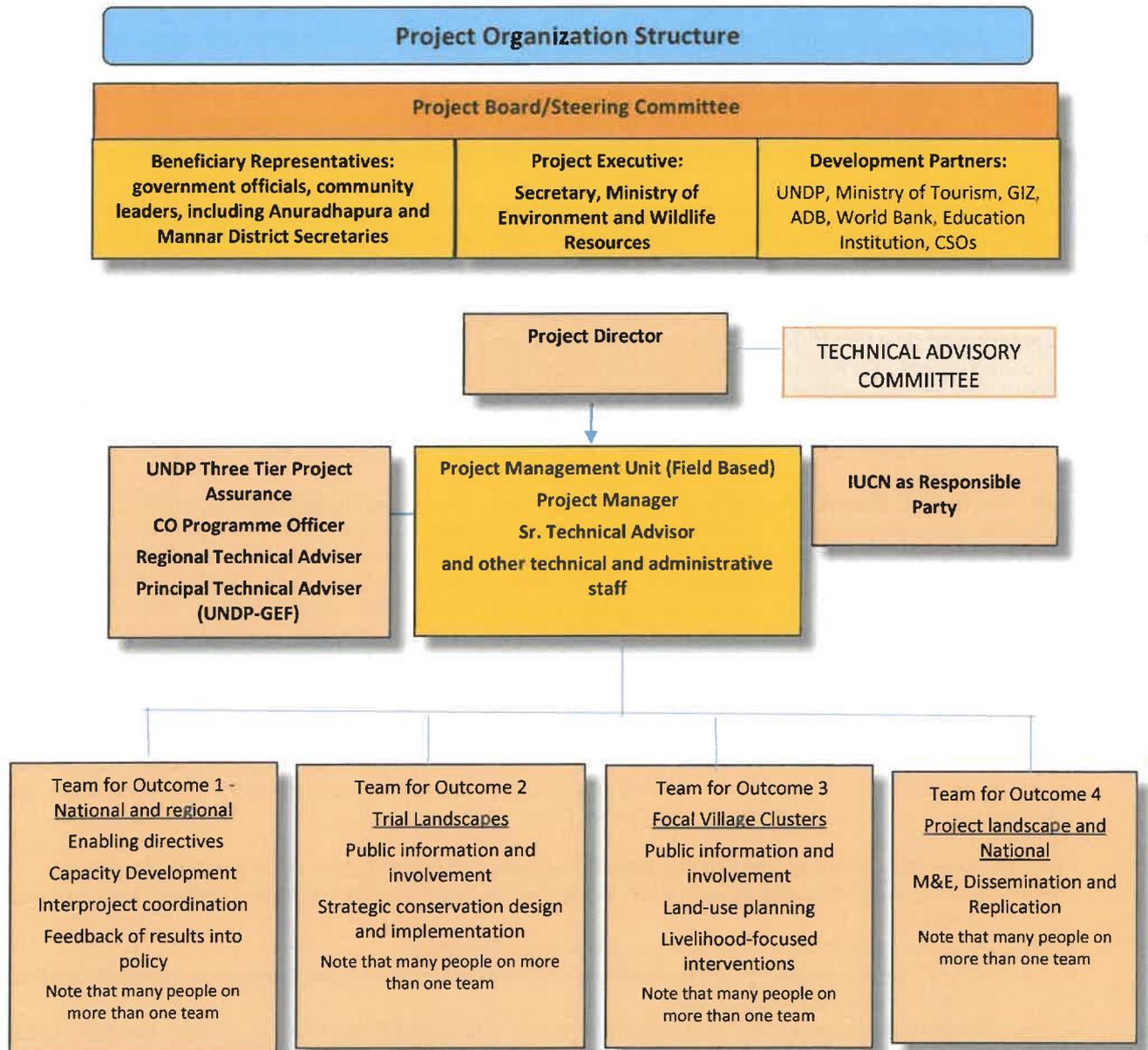
¹²⁰ http://www.lk.undp.org/content/dam/srilanka/docs/general/UNDP%20SL%202%20Standard_Basic_Assistance_Agreement.pdf
page 34

¹²¹ <https://undocs.org/DP/DCP/LKA/3>

¹²² http://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.C.52.Inf_06_Guidelines_on_the_Project_and_Program_Cycle_Policy.pdf

- Appraise the annual Project Implementation Report (PIR), including the quality assessment rating report, and make recommendations for the annual workplans
- Provide *ad hoc* direction and advice for exceptional situations beyond the control of the Project Manager
- Assess and approve project changes through appropriate revisions if and when required.

155. The Project Organization structure is as follows:



156. The Project Board (also called Project Steering Committee) will consist of representatives of the key stakeholder agencies and entities and will meet at least twice a year to provide guidance, monitor progress and approve finances for AWP and revisions. The lead members are listed in the following

paragraphs. The Additional Secretary, Environment Projects and Education and Training, Ministry of Environment and Wildlife Resources will represent the interests of the GEF Focal Point, and The National Planning Department and the External Resources Department will also be represented. The wider membership of the Project Board will be settled before Inception. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.

In case consensus cannot be reached within the Board, the UNDP Resident Representative (or their designate) will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.

157. Specific responsibilities of the Project Board include:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible mitigation and management actions to address specific risks;
- Agree on project manager's tolerances as required, within the parameters set by UNDP-GEF, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded;
- Advise on major and minor amendments to the project within the parameters set by UNDP-GEF;
- Ensure coordination between various donor and government-funded projects and programmes;
- Ensure coordination with various government agencies and their participation in project activities;
- Track and monitor co-financing for this project;
- Review the project progress, assess performance, and appraise the Annual Work Plan for the following year;
- Appraise the annual project implementation report, including the quality assessment rating report;
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
- Review combined delivery reports prior to certification by the implementing partner;
- Provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Address project-level grievances;
- Approve the project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses;
- Review the final project report package during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

The composition of the Project Board must include the following roles:

158. Project **Executive**, who represents ownership of the project and chairs the Project Board will be the Secretary, Ministry of Environment and Wildlife Resources. The Executive is ultimately responsible for the project, supported by the Senior Beneficiary and Development Partner(s) (see below). The Executive's role is to ensure that the project is focused throughout its life cycle on achieving its objectives and delivering outputs that will contribute to higher level outcomes. The Executive will ensure that the Project gives value for money, ensuring cost-conscious approach to the project, balancing the demands of beneficiary and supplier.

159. Specific Responsibilities of the Executive: (as part of the above responsibilities for the Project Board) include:

- Ensure that there is a coherent Project organization structure and a logical set of plans;
- Set tolerances in the AWP and other plans as required, for the Project Manager;
- Monitor and control the progress of the project at a strategic level;

- Ensure that risks are being tracked and mitigated as effectively as possible;
- Brief relevant stakeholders about Project progress;
- Organize and chair Project Board meetings.

160. **Beneficiary Representative(s)** is an individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Beneficiary Representative for this Project is a small but representative group of government officials and community leaders from the three Trial Landscapes, including the District Secretaries of Anuradhapura and Mannar Districts. Its primary function within the Board is to ensure the realization of Project results from the perspective of Project beneficiaries. The Senior Beneficiary is responsible for validating the needs and for monitoring that the solution will meet those needs within the constraints of the project. The Beneficiary role monitors progress against targets and quality criteria. This role, particularly in this Project, requires more than one person to cover all the beneficiary interests, but for the sake of effectiveness, the role will not be split between too many people.

161. Specific Responsibilities of the Beneficiary Representative (as part of the above responsibilities for the Project Board) include:

- Prioritize and present beneficiaries' opinions on Project Board decisions
- Ensure that beneficiaries' opinions and needs are presented accurately, completely and unambiguously;
- Monitor the implementation of activities at all stages to assess whether they will lead to meeting the beneficiary's needs within the scope of the Project;
- Evaluate impact of potential changes from the beneficiaries' point of view;
- Ensure that risks to the beneficiaries are monitored adequately.

162. The **Development Partner(s)** is an individual or group representing the interests of the parties concerned which provide funding and/or technical expertise to the project. The Development Partner(s) is/are:

1. Ministry of Tourism
2. UNDP
3. Land use Policy Planning Department (LUPPD);
4. Marine Environment Protection Authority (MEPA)
5. Education Institutions: Rajarata University; Sabaragamuwa University; Colombo University; Jaffna University and National Institute of Education;
6. Vocational training institutes: World University Services Canada; Vocational Training Institute Mannar and Anuradhapura;
7. Biodiversity Sri Lanka;
8. National CSOs: Wildlife and Nature Protection Society (WNPS); Environmental Foundation Limited (EFL); Center for Environmental Justice (CEJ); Public Interest Law Foundation (PILF); Women's Bureau;
9. Palmyrah Development Board (PBD)/Ministry of Traditional Industries and Small Enterprise Development;
10. GIZ
11. ADB
12. World Bank

163. **Responsible Parties for Implementation:** The Responsible Parties are project partners in receipt of project funds through the PMU for implementation of their assigned project activities. Thus, they are, accountable for implementing and reporting on project activities as per approved work plans and budgets. To the extent possible and relevant, the approach of the project is to decentralize implementation of the project activities to the stakeholders at the regional and local levels, so as to build ownership of project activities and project implementation capacity at these levels in keeping with the national policy objective to increasingly decentralize governance of development programs. Accordingly, the project is designed to be implemented by the following:

IUCN Sri Lanka to provide overall implementation support, and likely also include the North Central and Northern Provincial Councils to deliver government agriculture, fisheries and tourism related mainstreaming activities and Biodiversity Sri Lanka as a private sector platform for mainstreaming and policy advocacy.

The above-mentioned organizations will implement the project activities assigned to them with technical support from, or in collaboration with other agencies, depending on the nature of the activities and requisite expertise.

164. The **Technical Advisory Committee** convened during Project design will meet quarterly in Year 1 and 2 and bi annually in year 3 and 4 to give technical guidance to the Project. The PMU will be responsible for submitting quarterly reports to the TAC for review. The TAC will be chaired by the PD with support from the PM and membership will consist of representatives from government ministries and other agencies, UNDP, research and educational organizations, NGOs, technical experts and other relevant stakeholders. The Project Board will review and endorse membership at the time of Inception. Technical experts may be coopted from time to time to discuss specific issues. Terms of Reference for the TAC are included in **Annex D**.

165. As a representative of the Government and the Implementing Partner, the **Project Director (PD)** will take responsibility to ensure the efficient and effective implementation of GEF funds according to agreed workplans. The PD will be accountable to the MMDE and UNDP for the achievement of Project results, and will report to the Chair of the Project Board with delegated responsibility for overall supervision and quality assurance. As this Project will be field-based, the Project Director will liaise with the District Secretaries and Provincial Chief Secretaries to ensure effective field level implementation and transfer of funds to national and sub-national government entities. The Project Director will chair the Technical Advisory Committee (see below). The PD will be financed through co-financing, and his or her appointment will be made by the Secretary, MMDE in coordination with UNDP CO. Terms of Reference are given in Annex D.

166. The **Project Manager (PM)** has the authority and the responsibility to run the Project for day-to-day management and decision making, on behalf of the Project Board within the constraints laid down by the Board. The implementing partner appoints the Project Manager, who must be different from the Implementing Partner's representative in the Project Board. The position will be funded by the GEF grant. The Project Manager's primary responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. He or she will report to and support the Project Director (PD), who holds overall responsibility for Project results (see above). The Project Manager will inform the Project Board and the Project Assurance roles of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted. The PD and PM, with the intervention of the Project Board if required, will establish uncomplicated and effective administrative arrangements to ensure that Project funds flow smoothly to the Field Based PMU and that Project activities are never held up by bureaucracy. The Project Manager will remain on contract until the Terminal Evaluation report and the corresponding management response have been finalized and the required tasks for operational closure and transfer of assets are fully completed. Full Terms of Reference are given in Annex D.

167. The **Senior Technical Advisor (STA)** will be responsible for providing overall technical advice and management support to the entire Project. He or she will participate in all aspects of the project, provide technical guidance to the other PMU staff and consultants, represent the Project in technical discussions with government agencies and community organizations, take a lead role in commissioning of biophysical and socio-economic research under Outputs 2.3 and 3.3, the oversight of monitoring and dissemination of knowledge under Outputs 4.1, 4.2, 4.3, 4.4 and 4.5, and tracking progress under the cross-cutting Gender Action Plan (Output 4.2) and the monitoring and mitigation of social and environmental risk (also under Output 4.2). It has been decided to assign the responsibility of monitoring gender, social and environmental safeguarding to the full time STA rather than employing additional Project staff solely to carry out these tasks (see Section V and Annex D).

168. **Project Assurance:** UNDP provides a three – tier supervision, oversight and quality assurance role – involving UNDP staff in Country Offices and at regional and headquarters levels. Project Assurance is a totally independent of the Project Management function. The quality assurance role supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. This project oversight and quality assurance role is covered by the GEF Agency fee.

169. The **Project Management Unit (PMU)** will be based in or near the District Secretariat, Mannar, within easy reach of the Project's three Trial Landscapes. Close collaboration with the DS on a day to day basis will enhance the Project's impacts through on-the-job learning. When in Arunadhapura PMU and other Project staff will use office space made available as a PMU outpost in the Arunadhapura DS. The PMU will manage project contracts and finances and will provide day to day logistic and technical support for implementation of project activities. Apart from the PD, the PMU staff will be hired either on IUCN or government contracts. Responsible partners, and other *ad hoc* partners will be selected based on the AWP at Inception, and contracts will be designed and managed by the PMU.

170. The following staff will be assigned to the PMU (see also Section V, Annex C and Annex D):

- Project Manager (Head of PMU for operational purposes working closely with the Colombo based Project Director (PD))
- Finance and Procurement Officer (FPO) part time
- Senior Technical Adviser (STA)
- Learning and Communications Officer (ICO)
- *Three* Community-based Conservation Experts who will be out-posted, one to each of the three Trial Landscapes (Upper, Middle and Lower Malwathu)

Project Assistant

171. **Governance role for project target groups.**

Special attention has been paid during Project design to ensure a highly participatory basis to conservation design, land-use planning and livelihood-based interventions with benefits for both people and biodiversity conservation. The Three Community-based Conservation Experts will be responsible for establishing sound and effective mechanisms to include representation of target group opinions and ideas into planning of project interventions and decisions on partnerships (see Sections 3.2 and 4.2).

IX Financial Planning and Management

173. The total cost of the project is USD 32,598,930. This is financed through a GEF grant of USD 3,346,708, and USD 29,252,222 in parallel co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and any cash co-financing transferred to UNDP bank account only. This project does not envisage cash co-financing through UNDP.

174. Parallel co-financing: The actual realization of project co-financing will be monitored during the *mid-term review* and terminal evaluation process and will be reported to the GEF. The planned parallel co-financing will be used as follows:

| Co-financing source | Co-financing type | Co-financing amount | Planned Activities/Outputs | Risks | Risk Mitigation Measures |
|--|-------------------|---------------------|---|--|---|
| Ministry of Mahaweli Development and Environment: Climate Resilient Integrated Water Management Project | Grant | USD 3 million | Outputs 2.2 and 2.3 Water resources planning in the Malwathu river basin and mainstreaming biodiversity considerations into irrigation and agriculture development. | Project influence may be limited unless cross-sectoral involvement is increased | Recruiting highly qualified project staff and making a focus on interaction with other projects and programmes under Output 1.3 |
| Ministry of Mahaweli Development and Environment: Ecosystem Management and Conservation Project (ESCAMP) | Grant | USD 3.2 million | Outputs 2.2, 2.3 and 3.5 Coordinated effort to address human elephant conflict in the target districts and investments in landscape level tourism-associated livelihoods | Project outcomes may involve resettlement or displacement | See Annex E for full details of how this risk is going to be addressed |
| Ministry of Fisheries: Northern Province Sustainable Fisheries Development Project | Grant | USD 7.9 million | Outputs 2.3 and 3.5 Mainstreaming in to fishery sector Fishery infrastructure and landing sites development, support to fishery organizations to develop markets and related enterprises as a support to livelihoods in TL 3 | Potential difficulties in establishing an effective forum for exchange of views and approaches | Will address this proactively under Output 1.3 and through collaboration on training under CADEC (Output 1.2) |
| Ministry of Agriculture: Natural Resources Management Centre | Grant | USD 380,000 | Outputs 2.2, 2.3 and 3.4 Guidelines for agriculture, training and mainstreaming biodiversity-friendly agriculture into Provincial Agriculture Department | Potential delays in establishing effective interactions and getting biodiversity considerations included at the fundamental level required | Patient negotiations, beginning under Output 1.3 |
| Ministry Environment and Wildlife Resources: Forest Department | Grant | USD 1 million | Outputs 1.3, 1.4 and 4.1 Coordination meetings at national and regional/provincial levels, effectively coordinating between projects implementing environmental projects and establishing a monitoring protocol for post-project impact assessment | This is a direct contribution to the Project outputs and the only risk is that it is slow to be delivered | High standard of project management ensured by good recruitment and ultimate oversight and quality assurance by UNDP |

| | | | | | |
|---|---------|-----------------|--|---|--|
| Ministry of Tourism and Wildlife: Sri Lanka Tourism Development Authority | In-Kind | USD 4.7 million | Outputs 1.2, 1.3, 2.4 and 3.5 Training for tourism operators, mainstreaming in to tourism development plans especially in the project regions with methodologies and tools for carrying capacities etc, and investments in sustainable tourism promotion | The only risk here is that coordination will fail to make maximum use of the synergies. | High standard of project management ensured by good recruitment and ultimate oversight and quality assurance by UNDP at all three levels (HQ, Regional and Country) |
| Biodiversity Sri Lanka | In-kind | USD 2 million | Outputs 2.4 and 3.5 Private sector investment in capacities for tourism entrepreneurs to adopt sustainability standards and investment in sustainable tourism in the focal districts | Slight risk that pursuit of short term business interests may result in less than ideal solutions for local residents in terms of their benefits, economic and non-economic, from sustainable tourism | Slow and steady approach under the Project with the support of the Community Conservation Experts at FVC level and the Landscape Design Teams at the Trial Landscape level |
| GIZ-Deutsche Gesellschaft für Internationale | In-kind | USD 6.7 million | Outputs 1.3, 1.4, 2.3, 2.4 and 3.4 and 3.5 The Project will be implemented in parallel in Wilpattu National Park and its influence Zone providing opportunities for greater collaboration, data sharing, combined impact and lobbying, and investments in sustainable livelihoods | Possible overlap in activities | Avoid through meetings with the (GIZ) project team, who have already requested regular monthly of more frequent meetings with respect to Trial Landscapes 2 and 3 |
| UNDP | In-kind | USD 250,000 | Outputs 1.3, 1.5 4.2, 4.3 This cofinance will support field level coordination of agencies and government actors, feedback in to district and provincial development planning process, knowledge product an financial product development through BIOFin Phase 2 | Overstretched staff sometimes results in loss of opportunities for maximizing on synergies | UNDP CO will recruit the Project Manager and a Project Officer who will be paid for under the Project and they will work to ensure that these synergies are realized |
| IUCN | In-kind | USD 100,000 | Various parallel projects related to Outcome 3 | Pressure of work in individual projects leads to loss of opportunities for collaboration | IUCN have a major role in the Project and it is unlikely that opportunities will be lost. Regular inter-project meetings at the IUCN office in Colombo will be programmed. |

175. **Budget Revision and Tolerance:** As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the UNDP-GEF team to ensure accurate reporting to the GEF: a) Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more; b) Introduction of new budget items/or components that exceed 5% of original GEF allocation.

176. Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

Audit: The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies. Audit cycle and process must be discussed during the Inception workshop. If the Implementing Partner is an UN Agency, the project will be audited according to that Agencies applicable audit policies.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP.¹²³ All costs incurred to close the project must be included in the project closure budget and reported as final project commitments presented to the Project Board during the final project review. The only costs a project may incur following the final project review are those included in the project closure budget.

177. **Operational completion:** The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. **Operational closure must happen with 3 months of posting the TE report to the UNDP ERC.** The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

178. **Transfer or disposal of assets:** In consultation with the NIM Implementing Partner and other parties of the project, UNDP programme manager (UNDP Resident Representative) is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project. In all cases of transfer, a transfer document must be prepared and kept on file¹²⁴.

179. **Financial completion:** The project will be financially closed when the following conditions have been met: a) The project is operationally completed or has been cancelled; b) The Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

180. The project will be financially completed **within 6 months of operational closure or after the date of cancellation.** Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

Project extensions: The UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and only if the following conditions are met: one extension only for a project for a maximum of six months; the project management costs during the extension period must

¹²³ see <https://info.undp.org/global/popp/ppm/Pages/Closing-a-Project.aspx>

¹²⁴ See

https://popp.undp.org/layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default.

remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the UNDP Country Office oversight costs during the extension period must be covered by non-GEF resources.

X Total Budget and Work Plan

| | | | |
|--|--|-----------------------|-----------|
| Award ID: | 000117353 | Project ID(s): | 000114160 |
| Award Title: | Managing Together: ICEAFT | | |
| Business Unit: | LKA10 | | |
| Project Title: | Managing together: Integrating community-centered, ecosystem-based approaches into forestry, agriculture and tourism sectors | | |
| PIMS no. | 5804 | | |
| Implementing Partner (Executing Agency) | Ministry of Environment and Wildlife Resources (MoEWR) | | |

| GEF Component/Atlas Activity | Responsible Party | Fund ID | Donor Name | Atlas Budgetary Account Code | ATLAS Budget Description | Amount Year 1 (USD) | Amount Year 2 (USD) | Amount Year 3 (USD) | Amount Year 4 (USD) | Total (USD) | See Budget Note: |
|--|-------------------|---------|------------|------------------------------|---------------------------|---------------------|---------------------|---------------------|---------------------|----------------|------------------|
| Component 1: An enabling environment to mainstream integrated approaches into natural resource management in production sectors and landscapes | GoSL | 62000 | GEF | 71200 | International Consultants | 15,000 | 0 | 0 | 0 | 15,000 | 1 |
| | | | | 71300 | Local Consultants | 15,750 | 11,250 | 6,750 | 6,750 | 40,500 | 2 |
| | | | | 71600 | Travel | 14,000 | 14,170 | 8,500 | 8,500 | 45,170 | 3 |
| | | | | 75700 | Training, W/s and Conf. | 12,500 | 17,350 | 17,350 | 18,250 | 65,450 | 4 |
| | | | | 74200 | Audio Visual and Print | 8,000 | 23,000 | 28,900 | 20,613 | 80,513 | 5 |
| | | | | | Total Outcome 1 | 65,250 | 65,770 | 61,500 | 54,113 | 246,633 | |
| Component 2: Design of landscape strategies for biodiversity conservation and sustainable livelihoods and upward integration into existing policy | IUCN | 62000 | GEF | 71200 | International Consultants | 0 | 25,000 | 0 | 0 | 25,000 | 6 |
| | | | | 71300 | Local Consultants | 5,350 | 138,450 | 1,250 | 1,250 | 146,300 | 7 |
| | | | | 72100 | Contractual Services | 105,250 | 158,750 | 24,050 | 24,050 | 312,100 | 8 |
| | | | | 71600 | Travel | 15,350 | 72,750 | 5,750 | 5,750 | 99,600 | 9 |
| | | | | 75700 | Training, W/s and Conf. | 44,500 | 111,500 | 10,000 | 10,000 | 176,000 | 10 |
| | | | | | Total Outcome 2 | 197,700 | 562,700 | 44,800 | 44,800 | 850,000 | |
| | IUCN | | | 71200 | International Consultants | 0 | 15,000 | 0 | 0 | 15,000 | 12 |

| | | | | | | | | |
|---|-----------------------------------|-------------------------------|----------------------|----------------------|----------------------|----------------------|------------------|----|
| Component 3: Participatory land-use planning and livelihood-focused interventions to demonstrate socio-economic benefits of biodiversity conservation | 71300 | Local Consultants | 9,900 | 100,600 | 97,000 | 31,000 | 238,500 | 13 |
| | 72100 | Contractual Services | 0 | 256,600 | 257,100 | 149,000 | 662,700 | 14 |
| | 71600 | Travel | 0 | 48,200 | 56,000 | 20,000 | 124,200 | 15 |
| | 75700 | Training, W/s and Conf. | 0 | 72,700 | 45,900 | 40,000 | 158,600 | 16 |
| | 74200 | Audio Visual and Print | 0 | 39,500 | 41,500 | 20,000 | 101,000 | 17 |
| | | Total Outcome 3 | 9,900 | 532,600 | 497,500 | 260,000 | 1,300,000 | |
| Component 4: Monitoring and evaluation, and dissemination of knowledge | 71200 | International Consultants | 0 | 10,000 | 0 | 35,000 | 45,000 | 18 |
| | 71300 | Local Consultants | 58,650 | 82,650 | 64,650 | 79,650 | 285,600 | 19 |
| | 71600 | Travel | 8,500 | 17,000 | 17,000 | 17,000 | 59,500 | 20 |
| | 75700 | Training, W/s and Conf. | 28,000 | 34,700 | 48,600 | 49,308 | 160,608 | 21 |
| | 74200 | Audio Visual and Print | 30,000 | 70,000 | 70,000 | 70,000 | 240,000 | 22 |
| | | Total Outcome 4 | 125,150 | 214,350 | 200,250 | 250,958 | 790,708 | |
| Project Management | 71300 | Local Consultants | 39,000 | 39,000 | 39,000 | 42,367 | 159,367 | 23 |
| | | Total Project Mgt Cost | 39,000 | 39,000 | 39,000 | 42,367 | 159,367 | |
| PROJECT TOTAL | | | 437,000 | 1,414,420 | 843,050 | 652,238 | 3,346,708 | |
| SUMMARY OF FUNDS | | | Amount Year 1 | Amount Year 2 | Amount Year 3 | Amount Year 4 | Total | |
| | GEF | 437,000 | 1,414,420 | 843,050 | 652,238 | 3,346,708 | | |
| | Co-finance UNDP | 50,000 | 100,000 | 50,000 | 50,000 | 250,000 | | |
| | Co-finance IUCN | 30,000 | 30,000 | 30,000 | 10,000 | 100,000 | | |
| | Co-finance GIZ | 1,700,000 | 2,000,000 | 2,000,000 | 1,000,000 | 6,700,000 | | |
| | Co-finance Biodiversity Sri Lanka | 500,000 | 500,000 | 500,000 | 500,000 | 2,000,000 | | |

| | | | | | |
|-------------------------|------------------|-------------------|------------------|------------------|-------------------|
| Co finance - Government | 3,000,000 | 6,000,000 | 6,000,000 | 5,202,222 | 20,202,222 |
| TOTAL | 5,717,000 | 10,044,420 | 9,423,050 | 7,414,460 | 32,598,930 |

BUDGET NOTES

| No. | Description |
|-----|--|
| 1 | Data and Modelling Expert 6 weeks in Year 1 to support to determine quantifiable baselines and indicators leading to improved ecosystem health and services |
| 2 | Senior Technical Advisor 3 months/year@ 2,250 USD per month for 3.5 years to support outputs 1.1, 1.3 and 1.4 (=US\$23,625); Training Needs Assessor for 6 months @750 USD per month, for Year 1 (=4,500); Curriculum Developer 9 months @ 750 USD per month for Year 1 (\$6,750); \$5,625 USD for year 1 for additional short-term consultants to support Training Needs Assessment, Curriculum Development and Training Delivery. Total: US\$40,500 |
| 3 | Local Travel for outputs 1.1 to 1.4 (14,000 USD for Year. 1- 6,000 USD for accommodation, 5 visits to all sites by project officials from Colombo and 5 visits to all project sites by government and other stakeholders and 10,200 km for travel within the project sites, 14,170 USD for Yr 2- 6,000 USD for accommodation, 5 visits to all sites by project officials from Colombo and 5 visits to all project sites by government and other stakeholders and 10,600 km for travel within the project sites , 8,500 USD each for Year 3 and Year 4- 4,500 USD for accommodation, 3 visits to all sites by project officials from Colombo and 3 visits to all project sites by government and other stakeholders and 5,100 km for travel within the project sites for each year) |
| 4 | Training, workshops and conferences specially for outputs 1.2; 1.3; and 1.4 (\$12,500 for Year. 1 / \$17,350 for Year. 2/ \$17,350 for Year. 3/ \$18,250 for Year. 4). Cost estimates are based on following unit rate assumptions- Location Colombo- Team meeting half day for 10 Pax 20 USD; full day for 10 Pax 35 USD; workshops in hotels 25 USD per 1 Pax; training programme 20 USD per Pax per day. Location Anuradhapura 15, 35,20 and 20 USD respectively for above mentioned categories. In Mannar 15,30,15 and 10 USD respectively for above mentioned categories. |
| 5 | Audio visual and print production costs related to outputs 1.2; 1.3 and 1.4(8,000 USD for Year. 1/23,000 USD for Year. 2/ 28,900 USD for Year. 3/ 12,980 for USD Year. 4). This includes designing and printing project related information for different stakeholder groups; production of video clips in the second and third years of operation for wider circulation on the progress of the initiatives. Further participatory monitoring of the field level activities will be carried out through audio visual recording of important changes in their lives. |
| 6 | International Landscape Conservation Expert for 2 months @ 10,000 USD month to support 2.2 and International Ecotourism & Business Biodiversity Development Advisor 0.5 months @ 10,000 USD /month |
| 7 | Senior Technical Advisor 3 months/year@ 2,250 USD per month for four years to support outputs 2.2 to 2.5; Learning & Communication Officer 12 months @ 900 USD to support outputs 2.1, 2.4 and 2.5 (4 months in Year 1 and 3 months each in subsequent years). Short term consultants on tourism, agriculture, fisheries, biodiversity, socio-economic, gender integration (4 months each throughout the project period @ 1,500 USD per month with majority occurs in the year 2); Short term consultancies on Sustainable Forest Management, Innovative finance mechanisms for conservation finance; Livelihoods development (@ 1500 USD per Month for 6 months); 21,000 USD for other short term consultancies to be identified within the project period. |

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| 8 | <p>Conducting relevant awareness programmes for 2.1; Providing the necessary technical and material support needed for the landscape design and a negotiated land use plans for focal village clusters for output 2.5; Conduct estuarine erosion prevention interventions in areas such as Arippu, Achchankulam and Vankalai in Trial Landscape 3 for output 2.5; Conduct Strategic Environment Assessment in the Trial Landscape</p> |
| 9 | <p>Local Travel for outputs 2.1 to 2.5 (15,350 USD for Year. 1- 6,000 USD for accommodation, 3 visits to all sites by project officials from Colombo and 3 visits to all project sites by government and other stakeholders and 5,100 km for travel within the project sites, 72,750 USD for Year 2- 30,000 USD for accommodation, 15 visits to all sites by project officials from Colombo and 5 visits to all project sites by government and other stakeholders, 10 visits by project beneficiaries to other areas of the country as learning events and 12,600 km for travel within the project sites, 5,750 USD each for Year 3 and Year 4-1,500 USD for accommodation, 2 visits to all sites by project officials from Colombo and 2 visits to all project sites by government and other stakeholders and 6,200 km for travel within the project sites for each year)</p> |
| 10 | <p>Training Workshops and Conferences related to outputs 2.1, 2.2, 2.3, 2.4 and 2.5. Cost estimates are based on following unit rate assumptions- Location Colombo- Team meeting half day for 10 Pax 20 USD; full day for 10 Pax 35 USD; workshops in hotels 25 USD per 1 Pax; training programme 20 USD per Pax per day. Location Anuradhapura 15, 35,20 and 20 USD respectively for above mentioned categories. In Mannar 15,30,15 and 10 USD respectively for above mentioned categories.</p> |
| 11 | <p>Audio visual and print production costs related to outputs 2.1, 2.2, 2.3, 2.4 and 2.5. Year 1 and 2- Landscape level planning process related documentaries (3 documentaries @ 5,000 USD per documentary) and involving mass media in the country to promote the concepts and approaches amongst policy makers. Facilitation of mass media journalists representing print and electronic media of all local languages to visit the area (3 visits of 10 journalists in year 1 and 5 visits of 20 journalists in year 2); 10 leaflets and 3 brochures targeting the communities living in and around the trial landscapes and key decision makers of the area including politicians explaining approach of the project.</p> |
| 12 | <p>International Ecotourism & Business Biodiversity Development Advisor 1.5 months @ 10,000 USD /month for outputs 3.2 and 3.5</p> |
| 13 | <p>Senior Technical Advisor 3 months/year* 2,250 USD per month for four years to support outputs 3.2, 3.4 and 3.5; Learning & Communication Officer 12 months* 900 USD to support 3.5 mostly. Three Community based Conservation Experts for 48 months each @ 1,400 USD to cover the entirety of field implementation (only 900 USD per month for 48 month charged to this outcome); Land use mapping including bio-cultural, heritage sites and spatial features, Ecosystem carrying capacity assessment, Value and market chain identification and development 10 months per consultant @ 2,000 USD per month (60,000 USD); Consultancies for baseline information to be identified after the project inception 14,400 USD.</p> |
| 14 | <p>Conducting activities related to the introduction of the necessary livelihood modifications and capacity building focused on the target sectors for output 3.4; provisioning of technical and material support for livelihood modifications required as per land use plans in the fields of agriculture, fisheries, tourism, forestry and wildlife conservation for output 3.5</p> |
| 15 | <p>Local Travel for outputs 3.1 to 3.5 (48,200 USD-Year 2- 27,000 USD for accommodation (Prevailing Daily Subsistence Allowance for Mannar is 68 USD / day; Anuradhapura 108 USD / day and Colombo 223 USD /day), 5 visits to all sites by project officials from Colombo and 5 visits to all project sites by government and other stakeholders and 40,000 km for travel within the project sites, 56,000 USD Year 3- 27,000 USD for accommodation, 5 visits to all sites by project officials from Colombo and 5 visits to all project sites by government and other stakeholders and 60,000 km for travel within the project sites, 20,000 USD for Year 4- 12,000 USD for accommodation, 2 visits to all sites by project officials from Colombo and 2 visits to all project sites by government and other stakeholders and 15,600 km for travel within the project sites 4)</p> |
| 16 | <p>Training Workshops and Conferences related to outputs 3.1, 3.2, 3.3, 3.4 and 3.5. Cost estimates are based on following unit rate assumptions- Location Colombo- Team meeting half day for 10 Pax 20 USD; full day for 10 Pax 35 USD; workshops in hotels 25 USD per 1 Pax; training programme</p> |

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| | 20 USD per Pax per day. Location Anuradhapura 15, 35,20 and 20 USD respectively for above mentioned categories. In Mannar 15,30,15 and 10 USD respectively for above mentioned categories. |
| 17 | Audio visual and print production costs related to outputs 3.1, 3.2, 3.3, 3.4 and 3.5. in Year 2 and 3 - Producing awareness and education materials targeting the government officials on different innovative techniques used in the project especially video clips (4 clips @ 3,000 USD), technical guides (5 guides @ 3,000 USD) and multi media presentations in local languages (Translation costs 5,000). There will be two different sets of materials targeting the policy makers / senior decision makers of the relevant institutions and technical level users. These materials will be used outside the trial landscapes as well as advocacy materials. Year 4- |
| 18 | Mid-term evaluator for @ 10,000 USD in Yr. 2; Data and Modelling Expert 6 weeks in year 4 to support landscape level planning @ 10,000 USD per month and Terminal Evaluator @ 20,000 USD |
| 19 | Senior Technical Advisor 4 months/year @ 2,250 USD per month for four years (\$36,000) and necessary travel costs; Learning and Communication Officer 28 months spread over 4 years @ 900 USD per month (\$25,200) to contribute to the work under outputs 4.3, 4.4 and 4.5 and necessary travel costs; Impact monitoring specialist- 18 months spread over 4 years @ 1,000 USD per month (\$18,000) to support work under 4.1; Communications Strategy and product development – 16 months spread over 4 years @ 1,500 USD per month (\$24,000);10,400 USD for year 1 for the mid term evaluation- local consultant and 15,000 USD for year 4- Final evaluation- Local consultant; Part time Technical Specialist in Safeguards and Monitoring (750 USD*8 months per year for 4 years) supporting the Project Manager and the Senior Technical Advisor in monitoring, safeguards, coordination with the government and gender particularly for activities under outputs 4.1; 4.3. ; Three Community based Conservation Experts for 48 months each @ 1,400 USD to support project implementation in Trial Landscapes (only 500 USD per month for 48 month charged under this line); Part-time Finance and Procurement Officer for 48 months @ 50% time and cost to the project (1500*48*0.5 = 36,000); |
| 20 | Local Travel for outputs 4.1 to 4.5 (8,500 USD for Year 1- 1,500 USD for accommodation, 3 visits to all sites by project officials from Colombo and 2 visits to all project sites by government and other stakeholders and 12,600 km for travel within the project sites, 17,000 USD each for Year 2, Year3 and Year 4 6,000 USD for accommodation, 5 visits to all sites by project officials from Colombo and 2 visits to all project sites by government and other stakeholders and 17,000 km for travel within the project sites for each year including the mid-term evaluation and final evaluation related travel and accommodation) |
| 21 | Training, workshops and seminars related to activities coming under outputs 4.3 and 4.4. Cost estimates are based on following unit rate assumptions- Location Colombo- Team meeting half day for 10 Pax 20 USD; full day for 10 Pax 35 USD; workshops in hotels 25 USD per 1 Pax; training programme 20 USD per Pax per day. Location Anuradhapura 15, 35,20 and 20 USD respectively for above mentioned categories. In Mannar 15,30,15 and 10 USD respectively for above mentioned categories. |
| 22 | Audio visual and print production costs related to outputs 4.2 ; 4.3 and especially 4.5. Year 1- production of 6 video clips on baseline situation of the area and relevant approaches of the project; translating the video clips into local languages; Developing 1 leaflet and 3 brochures on the project approach as introductory materials to the stakeholders in local languages and in English. Producing video clips with the Year 2, 3 and 4 - Producing video clips (5 clips of each site for three sites @2,500 USD; 10,000 USD for translating / sub titling the clips to other local languages and English to share the lessons learnt, Developing 5 brochures in local languages and 3 booklets in English capturing the progress of the project approach targeting wider sharing of the results among stakeholders and general public; facilitating 5 media crews representing mass media. Video clips and media productions will be used as promotional materials in the mobile awareness unit. |

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| 23 | Project Manager responsible for overall management of the project (2,250 USD*12 months per year for 4 years); and a part time Project Officer (@750 USD for 4 months per year for 4 years plus 3 months full time during the last year of the project operation) supporting the Project Manager and the Senior Technical Advisor in monitoring, safeguards, coordination with the government and gender particularly for outputs. Full time Project Assistant @ 500 USD / month for 48 months (24,000 USD) |
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XI Legal Context

181. This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Sri Lanka and UNDP, signed on 20th March 1990. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

182. This project will be implemented by the Ministry of Environment and Wildlife Resources ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XII Risk Management

183. Consistent with the Article III of the SBAA [*for the Supplemental Provisions to the Project Document*], the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan.

184. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document.

185. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml.

186. The Implementing Partner acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the Implementing Partner, and each of its responsible parties, their respective sub-recipients and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.

(a) In the implementation of the activities under this Project Document, the Implementing Partner, and each of its sub-parties referred to above, shall comply with the standards of conduct set forth in the Secretary General's Bulletin ST/SGB/2003/13 of 9 October 2003, concerning "Special measures for protection from sexual exploitation and sexual abuse" ("SEA").

(b) Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, the Implementing Partner, and each of its sub-parties referred to above, shall not engage in any form of sexual harassment ("SH"). SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to

cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment.

187. In the performance of the activities under this Project Document, the Implementing Partner shall (with respect to its own activities), and shall require from its sub-parties referred to in paragraph 4 (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, the Implementing Partner will and will require that such sub-parties will take all appropriate measures to:

- i. Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;
- ii. Offer employees and associated personnel training on prevention and response to SH and SEA, where the Implementing Partner and its sub-parties referred to in paragraph 4 have not put in place its own training regarding the prevention of SH and SEA, the Implementing Partner and its sub-parties may use the training material available at UNDP;
- iii. Report and monitor allegations of SH and SEA of which the Implementing Partner and its sub-parties referred to in paragraph 4 have been informed or have otherwise become aware, and status thereof;
- iv. Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and
- v. Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. The Implementing Partner shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties referred to in paragraph 4 with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the Implementing Partner shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.

188. The Implementing Partner shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the Implementing Partner, and each of its sub-parties referred to in paragraph 4, to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.

189. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).

190. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

191. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

192. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

193. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

194. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes in accordance with UNDP's regulations, rules, policies and procedures. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.

195. The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

196. Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

197. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail the Implementing Partner's obligations under this Project Document.

198. Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

199. Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

200. Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.

201. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

202. The Implementing Partner shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled "Risk Management Standard Clauses" are included, mutatis mutandis, in all sub-contracts or sub-agreements entered into further to this Project Document.

XIII Annexes

- A. Multi Year Workplan *(attached to this ProDoc for signature)*
- B. Core Indicators
- C. Overview of Technical Consultancies and Subcontracts *(attached to this ProDoc for signature)*
- D. Terms of Reference
- E. UNDP Social and Environmental Screening Procedure and Action Plan *(attached to this ProDoc for signature)*
- F. Stakeholder Engagement Plan
 - F1 Stakeholders
 - F2 Stakeholders specifically related to Gender
 - F3. Methods of initial engagement of communities
 - F4 Partner Projects and Programmes
- G. Gender Analysis and Action Plan
- H. UNDP Risk Log *(attached to this ProDoc for signature)*
- I. Results of the Capacity Assessment of the Project Implementing Partner (PCAT)
- J. Additional Agreements, Including Letters from Co-financiers
 - J1. Additional Agreements – Co-financing letters
 - J3. Additional Agreements – ESMF
- K. Theory of Change Diagrams
 - K1 ToC explanatory diagram
 - K2 ToC Overall
 - K3 ToC Summary of Overall
 - K4 ToC Agriculture
 - K5 ToC Marine Fisheries
 - K6 ToC Tourism
 - K7 ToC Forestry and Wildlife
 - K8 ToC Mind Map
- L. Rationale and Process of Selection of the Project Landscape and Trial Landscapes
- M. National Policy Setting for the Project
 - M1 Institutions
 - M2 Civil Society Organizations
 - M3 Environmental Policy
 - M4 International Conventions
 - M5 Strategic Environmental Assessment
 - M6 Environmentally Sensitive Areas
- N. Tourism in the Project Landscape and Potential Interventions
- O. Relevant Laws
- P. Agriculture in the Project Landscape and Potential Interventions
- Q. Existing and Proposed Protected Areas in the Project Landscape
- R. Profile of the Project Landscape and each of Three Trial Landscapes
- S. Focal Village Clusters in the Trial Landscapes
- T. Forest Cover in the Project Landscape and Potential Interventions

- U. Endemic Fauna of the Trial Landscapes with Globally Threatened Status
- V. Administrative Structure of Sri Lankan government
- W. Green House Gases Calculations
- X. Human Wildlife Conflict and Wildlife Crime in the Project Landscape
- Y. Scorecards for Sustainable Tourism Indicator
- Z. Scorecard
 - Z1. Scorecard for Landscape Performance Indicator
 - Z2. UNDP Capacity Development Scorecard
- AA. Project Map and geospatial coordinates of the project area *(attached to this ProDoc for signature)*
- AB. Monitoring Plan *(attached to this ProDoc for signature)*

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | | |
|---|--|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|--|
| | | | Q1 | Q2 | Q3 | Q4 | |
| Output 1.4. Recommendations and proposals for changes in policy, institutions or practice that will be required for replication of the landscape conservation design approach to mainstreaming nationally. | Gradual development of policy recommendations to facilitate scaling up of Project-led approaches nationally, based on demonstrations related to agriculture, fisheries, forestry and tourism in the field | UNDP PMU MMDE | | | | X | X | X | X | X | X | X | X | X | X | X | X | | |
| | Guidelines on mainstreaming developed, initially using the experience of GEF 05 ESA Project and field tested under Output 2.4/ 3.4 to be developed into recommendations | UNDP PMU MMDE | | | | | | | | | | | | | | | | | |
| | Recommendations covering range of relationships between biodiversity and NRM, including for example, the trade-offs between "land sharing" and "land sparing" (see Prodoc Sections 1.4 and 4.2) for biodiversity conservation and livelihoods in the context of the Project. | UNDP PMU MMDE | | | | | | | | | | X | X | X | X | X | X | | |
| | Preparing policy prescriptions and tools to support land-use zoning approach and SEA (strategic environmental assessments) tested in the ESA Project to be improved for adoption in 2.2 and 2.3 | UNDP PMU MMDE | | X | X | X | | | | | | | | | | | | | |
| | Specific policy recommendations regarding how to address biodiversity concerns related to international transboundary issues, climate change mitigation at landscape scale, and assessment of biodiversity impacts of irrigation projects | UNDP PMU MMDE | | | | | | | | | | | | X | X | X | X | | |
| Outcome 2: Natural resource management, tourism and land use are guided by a strategic design for biodiversity conservation and sustainable livelihoods across multiple jurisdictions in three Trial Landscapes in the Northern and North Central Provinces | | | | | | | | | | | | | | | | | | | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|--|--|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| Output 2.1. Public information and involvement programme designed and implemented across all Districts and Divisional Secretariats represented in the Trial Landscapes | Design of the public information and involvement programme that will facilitate the preparation and implementation of the landscape strategies for the three TLs | UNDP, PMU, MMDE | X | | | | | | | | | | | | | | | |
| | Public meetings and presentations held in districts, divisions and focal village clusters | PMU, UNDP, MMDE | | X | | X | | | | | | | | | X | | | |
| | Links to the programme under Focal Village Clusters (Output 3.1) which will begin after the TL programme | PMU, UNDP, MMDE | | | | X | | | | | | | | | X | | | |
| | Preparation of publicity materials - print and film | PMU, UNDP, MMDE | | X | | X | | | | | | | | | | | | |
| | Competitions and other forms of engagement | PMU | | X | | X | | | | | | | | | X | | | |
| | Guided visits to protected areas | PMU, MMDE | | | | X | | | | | | | | | X | | | |
| | Mobile Education Unit touring the three TLs and District centres with films, presentations, and theatre targeted at the landscape level planning | PMU, UNDP, MMDE | | | | X | | | | | | | | | X | | | |
| | Development of Mannar Project office as a centre of excellence for information on Biodiversity (including Climate Change) | PMU, UNDP, MMDE | | | | X | | | | | | | | | X | | | |
| | Establishment of working arrangements with local government following up on Directives under Output 1.1 | PMU, MMDE | | X | | | | | | | | | | | | | | |
| | Finalize the trans-jurisdictional and multi-sectoral government interlocutors for the landscape | PMU, MMDE | | X | | X | | | | | | | | | | | | |
| Output 2.2 Mechanisms for trans-jurisdictional and multi-sectoral consultations in the landscape conservation design process | Hold pilot meetings to test exactly how the Project will | PMU, MMDE | | X | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|--|--|---------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| Output 2.3 Strategic conservation designs for each Trial Landscape for incorporation into government decision making and local development plans | work with communities and government together | | | | | | | | | | | | | | | | | |
| | Determine capacity needs in terms of GIS for example | UNDP PMU MMDE | X | | | | | | | | | | | | | | | |
| | Determination of the scope of each strategic design and preparation of full outlines | PMU MMDE | X | | | | | | | | | | | | | | | |
| | Decisions on core planning teams for each TL - and the links between the teams for TL2 and TL3 and engagement with other donor funded projects operating in the TLs | PMU MMDE | X | | | | | | | | | | | | | | | |
| | Agreement on the process for development of each TL strategic design, and assignments allocated, with the people responsible, and time table | PMU MMDE | | X | | | | | | | | | | | | | | |
| | Formal agreements with District and lower level governments negotiated, for adoption of the final strategic designs in local Development Plans and decision making processes | UNDP PMU MMDE | | X | | | | | | | | | | | | | | |
| | Data needs determined (See Section 4.2) | PMU,MMDE | X | | | | | | | | | | | | | | | |
| | Necessary research and analysis done | PMU,MMDE | | X | | | | | | | | | | | | | | |
| | User-friendly GIS maps with advanced tools to facilitate landscape scale planning, and paper maps for easy use in remote villages | PMU, UNDP, MMDE | | | X | | | | | | | | | | | | | |
| | Current and potential threats and constraints agreed upon by consensus | PMU, UNDP, MMDE | | X | | X | | | | | | | | | | | | |
| Analysis of consequences of current policies and their implementation and | PMU, UNDP, MMDE | | | X | X | | | | | | | | | | | | | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|--|--|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| Output 2.4 Guidelines for mainstreaming biodiversity conservation into natural resource management, tourism and land use planning. | recommendations for changes (alternatives) that could be implemented locally | | | | | | | | | | | | | | | | | |
| | Definition of management actions required by responsible agencies and groups to implement recommended alternatives | PMU, UNDP, MMDE | | | X | | | | | | | | | | | | | |
| | Identification of resource requirements: e.g. funds and funding sources, skilled personnel, equipment and facilities, training, public participation in management, information | PMU, UNDP, MMDE | | | | X | | | | X | | | | | | | | |
| | Development of mechanisms and timetable for provision of resources | PMU, UNDP, MMDE | | | | | | | X | | | | | | | | | |
| | Preparation of a "living document" subject to periodic revisions, | PMU, UNDP, MMDE | | | | | X | | | | | | | | | | | |
| | Review period, before joint agreement / ratification | PMU, UNDP, MMDE | | | | | X | | | X | | | | | | | | |
| | Review of existing governmental and community procedures (at both national and local levels) that regulate impacts on biodiversity, of tourism, agriculture, fisheries and forest management | PMU, UNDP, MMDE | | | | | X | | | X | | | | | | | | |
| | Review of Technical Guidelines developed by GEF 05 ESA Project and improved/updated based on <i>status quo</i> and the TL strategic designs, for incorporation into local, and eventually national, regulations and normal practice: a) land use planning, b) tourism, | PMU, UNDP, MMDE | | | | | X | | | X | | | | | | | | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | | | |
|---|---|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|---|--|
| | | | Q1 | Q2 | Q3 | Q4 | | |
| Output 2.5 Technical and material support for immediate actions required under the agreed strategic designs | c) infrastructure development, d) agriculture and fisheries e) forestry, f) protected area management | PMU, UNDP, MMDE | | | X | | | | | | | | | | | | | | | |
| | Consultation and production of guidance on certification of sustainability in tourism, agriculture, fisheries and forestry. | | X | | | | | | | | | | | | | | | | | |
| | Identification of, and consensus on, the actions to be supported under the Project and those to be pursued by other organizations | PMU, UNDP, MMDE | | | X | | | | | | | | | | | | | | | |
| | Integration of strategic design (Output 2.3) and mainstreaming guidelines (Output 2.4) into District (and lower level) development plans, routine decision making, local regulations, and proposed actions under donor-supported development projects and programmes. | PMU, UNDP, MMDE | | | | | X | | | | | | | | | | | | | |
| | Interventions required under the strategies on land allocation for conservation, such as elephant corridors, and Environmentally Sensitive Areas | PMU, UNDP, MMDE | | | | | | | | X | | | | X | | | | | X | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | | |
|--|---|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|---|
| | | | Q1 | Q2 | Q3 | Q4 | |
| | | | | | | | | | | | | | | | | | | | |
| | Achievement of reforestation targets whether through natural regeneration or planting | PMU, UNDP, MMDE | | | | X | | | X | X | X | X | X | X | X | X | X | X | X |
| | Monitoring and regulation of tourist operations and tourist development proposals | PMU, UNDP, MMDE | | | | | | | | | | | | | | | | X | X |
| | Tourism green certification system tested | PMU, UNDP, MMDE | | | | | | | | X | X | X | X | X | X | X | X | | |
| | Monitoring and regulation of current and proposed practices (such as described in proposals for new developments) in fisheries, water management and agriculture | PMU, UNDP, MMDE | | | | | | | | X | X | X | X | X | X | X | X | X | X |
| | Direct support to other donor-funded projects in the Project landscape to incorporate the agreed mainstreaming guidelines into those projects' work plans and <i>modif operandi</i> . | PMU, UNDP, MMDE | | | | | | | | X | X | X | X | X | X | X | X | X | X |
| Outcome 3: Biodiversity conservation priorities shape sustainable livelihoods in natural resource management and tourism in six Focal Village Clusters in three Trial Landscapes in the Northern and North Central Provinces | | | | | | | | | | | | | | | | | | | |
| Output 3.1. Public information and involvement programme designed and implemented in the focal village clusters | Focal village clusters identified through public involvement in 1.3 and 2.1 | PMU, MMDE | | X | | | | | | | | | | | | | | | |
| | Design of the public information and involvement programme focused on facilitation of the preparation and implementation of the six Focal Village Cluster Plans | PMU, MMDE | | | | X | | | | | | | | | | | | | |
| | Close links with the wider Trial Landscape programmes under Output 2.1 through Public meetings and presentations held | PMU | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|---|--|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| | | | | | | | | | | | | | | | | | | |
| | School based activities that aim to (a) involve and inspire young people and (b) influence parents through their children | PMU | | | | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | Ecology clubs, nature watching clubs (both inside and outside school settings), guided visits to protected areas. (See Prodoc para 73) | PMU | | | | | X | X | X | X | X | X | X | X | X | X | X | X |
| | Competitions and other forms of engagement | PMU | | | | | | X | X | X | X | X | X | X | X | X | X | X |
| | Mobile Education Unit (see above under Output 2.1) visits to the six Focal Village Clusters with films, presentations, photographs etc improving the effectiveness of inter community lessons sharing for community level planning (in collaboration with other similar projects operating in the area) | PMU, UNDP, MMDE | | | | | X | X | X | X | X | X | X | X | X | X | X | X |
| Output 3.2. Participatory mechanisms to bring together community and government stakeholders in a landscape conservation design approach to local land use planning | Wide consultation on best practice, followed by adoption of a plan and schedule for working arrangements that include the participation of Grama Niladharis and other local government officials, livelihood focused CBOs, women's groups, and youth organizations, and individual citizens and other interest groups both local and visiting. | PMU, MMDE | | | | | | | | | | | | | X | | | |
| | Mapping of vulnerabilities and risks to inform the design, including poverty rates, female headed households and nutrition | PMU, MMDE | X | X | X | X | | | | | | | | | | | | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|---|--|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| | standards and disaster exposure | | | | | | | | | | | | | | | | | |
| | Formal meetings and workshops held to test the mechanisms for application under Output 3.4 | PMU, MMDE | | X | | | | X | | | | | | | | | | |
| | Informal, long term relationships to build up confidence, understanding and ownership of Project aims. | PMU, MMDE | | | | | X | | | | | | | X | | | | |
| | Scoping of private sector and other development actors in the focal villages and TLs that have longer term stake in the area | PMU, MMDE | X | | | | X | | | | | | X | | | | | |
| | Collation and assessment of existing information and assessment of gaps | PMU, UNDP, MMDE | X | | | | | | | | | | | | | | | |
| | Preparation of multidisciplinary research and monitoring plan covering biophysical and socio-economic data requirements | PMU, UNDP, MMDE | X | | | | | | | | | | | | | | | |
| | Engagement with partners including international research organizations | PMU, UNDP, MMDE | | X | | | X | | | X | | | X | | | X | | X |
| | Implementation of the research and monitoring plans | PMU, UNDP, MMDE | | X | | | X | | | X | | | X | | | X | | X |
| | Determination of the scope of each Focal Village Cluster Plan and preparation of full outlines | PMU, UNDP, MMDE | | | X | | | | | | | | | | | | | |
| Output 3.4. Six village cluster land-use plans that provide opportunities for novel | | | | | | | | | | | | | | | | | | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|---|--|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| or modified livelihoods linked with biodiversity conservation | Decisions on core planning teams for each FVC, including links with the respective TL teams preparing the overarching Landscape strategic designs, and engagement with other donor funded projects operating in the FVCs | PMU, UNDP, MMDE | | | X | | | | | | | | | | | | | |
| | Agreement on the process for development of each FVC land-use plan, and assignments allocated, with the people responsible, and time table | PMU MMDE | | | X | | | | | | | | | | | | | |
| | Formal agreements with GND, DSD and local Land Use Planning Department Units negotiated, for adoption and/or acceptance of the completed plans in local government plans and and routine decision making | PMU, UNDP, MMDE | | | X | X | | | | | | | | | | | | |
| | User-friendly GIS maps with advanced tools to facilitate landscape scale planning, and paper maps for easy use | PMU, MMDE | | | X | X | | | | | | | | | | | | |
| Make use of community based three dimensional mapping techniques for visualization of land use options and ecological flow and impacts ¹²⁵ | PMU, MMDE | | | X | X | X | X | | | | | | | | | | | |

¹²⁵ <http://pubs.iied.org/pdfs/9312IIEE.pdf#page=72> (Chapter 11)
<http://wwf.panda.org/homepage.cfm?10641/conservation-goes-3d>

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|--------|--|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| | Current and potential threats and constraints agreed upon by consensus | PMU, MMDE | | | | X | | | | | | | | | | | | |
| | Analysis of consequences of current land use practice and the drivers of them, with reference to Project ThOch analyses (Annex K) | PMU, MMDE | | | | X | | | | | | | | | | | | |
| | Recommendations for alternative land use that could be implemented locally, and definition of actions required by individuals, community groups, and responsible agencies in order to implement recommended alternatives | PMU, MMDE | | | | X | | | | X | | | | | X | | | |
| | Preparation of a "living document" subject to periodic revisions. | PMU, MMDE | | | | | | | | X | | | | | | | | |
| | Review period, before joint agreement / ratification | PMU, MMDE | | | | | | | | X | | | | | | | | |
| | Identification of resource requirements: e.g. funds and funding sources, skilled personnel, equipment and facilities, training, public participation in management, information for livelihood-focused interventions | PMU, UNDP, MMDE | | | | | | | | X | | | | | | | | |
| | Development of mechanisms, engagement of partners, and a timetable for provision of resources, implementation of the plans, and establishment of working arrangements with potential investors in livelihood-focused interventions | PMU, UNDP, MMDE | | | | | | | | X | | | | | | | | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|---|--|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| Output 3.5. Technical and material support for livelihood changes under the land-use plans in the fields of tourism and natural resource management | Technical and material support for novel or modified livelihoods in tourism, agriculture, fisheries, forestry and wildlife conservation (not yet defined in detail because that would preempt the planning process and its participatory and inclusive nature - see Prodoc 4.1 para 79). | PMU, MMDE | | | | | X | X | X | X | X | X | X | X | X | X | X | X |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| Facilitation of links with private sector investors, provision of market advice | PMU, UNDP, MMDE | PMU, UNDP, MMDE | | | | | X | X | X | X | X | X | X | X | X | X | X | X |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| Financial and technical support in selected interventions in areas such as: + Payments for Ecosystem Services + Ecological certification for agricultural produce, harvests of wild plants, fisheries, and tourism operations + Premium pricing for traditional varieties of rice + Conservation agreements, grants and co-management arrangements + Contributions towards the capital costs of well-planned mechanisms to avoid crop damage and livestock losses from wild animals (to replace compensation eventually). Environmental and socio-economic impact assessments for all proposed interventions before approval followed by monitoring during implementation | PMU, UNDP, MMDE | PMU, UNDP, MMDE | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|---|--|---|--|-----------------|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | | Vocational training carried out under the Project in support of specific livelihood-focused interventions. | PMU, UNDP, MMDE | | | | | | X | X | X | X | X | X | X | X | X |
| Institutionalization of training locally (see Prodoc para 79) | PMU, MMDE | | | | | | | | | X | X | X | X | X | X | X | X | |
| Outcome 4 Monitoring and evaluation, and dissemination of project methods and results contributes to wider application of landscape approach to mainstreaming of biodiversity | | | | | | | | | | | | | | | | | | |
| Output 4.1 Monitoring protocols and necessary institutional agreements to assess the impacts of the landscape conservation design and livelihood-focused interventions both during and after the end of the project | Finalization of the Project Results Framework and measurement of the indicator baselines that are still outstanding (Approval at Inception Workshop) Development of a monitoring plan based on PRF, and allocation of responsibilities through external contracts where necessary Implementation of the monitoring plan Development of post-project monitoring protocols, necessary training, and agreements from institutions that will execute them | PMU, UNDP, MMDE PMU, UNDP, MMDE PMU, UNDP, MMDE | X | | | | | X | X | X | | X | X | X | | X | X | X |
| Output 4.2 Periodic reviews and evaluations of monitoring data collected during the project | Annual reviews against the PRF, including for PIR when due Biannual Technical Advisory Committee/Steering Committee meetings (in Colombo and in Project landscape) with intervening field visits by subgroups of the TAC/SC | PMU, UNDP, MMDE PMU, UNDP, MMDE | | | | X | | | | X | | | | | | X | | X |
| Output 4.3 Publications, films, exhibitions, databases that publicize the methods used and the results of the project interventions | Development of master plan for the dissemination of Project messages and results, engagement in dialogue with stakeholders, and facilitation of replication in other landscapes | PMU, UNDP, MMDE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|---|---|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| | Formation of links with similar projects in other countries followed by exchange of news and experience. For example, a Picture Story and video will be prepared in partnership with UNDP Ecosystems and Biodiversity. | PMU, UNDP, MMDE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | Project website, Project Twitter feeds and Project Facebook pages updated daily | PMU, UNDP, MMDE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | Databases that are made openly available on the Project website | PMU, UNDP, MMDE | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | A quarterly Project Newsletter reporting on activities, and addressing, through editorials and specialist articles, substantive related conservation issues each month. | PMU, UNDP, MMDE | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | Publicity materials, for general public, for teachers and undergraduates, NGOs, press releases. | PMU, UNDP, MMDE | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | Coordination of the use of Project products such as the guidelines to mainstreaming of biodiversity into natural resource management and tourism produced under Output 2.4 to pursue policy changes and policy implementation changes under Output 1.4. | PMU, UNDP, MMDE | | | | | | | | X | X | X | X | X | X | X | X | X |
| Output 4.4 Organized visits by the public and regional government officials to project sites to demonstrate and explain | Overall plan prepared for visits | PMU, UNDP, MMDE | X | | | | | | | | | | | | | | | |
| | Plan developed to fund visits from certain categories of people through grants. These might include | PMU, UNDP, MMDE | X | | | | | | | | | | | | | | | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | | |
|--|--|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|---|
| | | | Q1 | Q2 | Q3 | Q4 | |
| project activities and achievements | journalists, writers, film-makers students | PMU, UNDP, MMDE | | | X | | | | | | | | | | | | | | |
| | Visits arranged for print and media journalists, specialist NGOs, writers, film-makers, students | | | | | X | | | | | | | | | | | | | X |
| | Visits arranged for: + National and regional government officials who will meet officials from other sectors and jurisdictions + Conservation NGOs, rural development NGOs, bilateral and multilateral aid organizations + Private sector companies and consortia | | | | | | X | | | | | | | | | | | | |
| Output 4.5 Talks and presentations by project staff in Colombo and in District and Provincial centres to explain project methods and results | Exchange visits for Project beneficiaries with people in other areas of the Project landscape | PMU, UNDP, MMDE | | | | | | | | X | | | | | | | | | X |
| | An overall plan to cover all relevant forums | PMU, UNDP, MMDE | | | | | | | | | | | | | | | | | |
| | Informal "training" for journalists, amateur or novice film-makers and teachers in the basics of mainstreaming, and biodiversity conservation outside protected areas, and biodiversity professionals in how to reach the public better. | PMU, UNDP, MMDE | | | | X | | | | | X | | | | | | | | X |
| | Regular conservation "salons" where talks by guest speakers will be followed by discussion sessions in conjunction with: + Media groups, + Private sector organizations such as Biodiversity Sri Lanka and | PMU, UNDP, MMDE | | | | | | | | X | | | | | | | | X | |

| Output | Indicators * | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|--------|---|-------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | | Q1 | Q2 | Q3 | Q4 |
| | the various Chambers of Commerce + Individual companies and business organizations + Government officials | | | | | | | | | | | | | | | | | |
| | The Mobile Education Unit established with private-sector support and public collaboration that will tour the Project landscape will be tasked at intervals to travel to Colombo and other selected cities to set up a Project exhibition and to host Project speakers, in key sites, including University campuses and public parks. | PMU, UNDP, MMDE | | | | | X | | | | | | | | | | | X |

Annex E Social and Environmental Screening Procedure (SESP)

Project Information

| Project Information | |
|-------------------------------------|---|
| 1. Project Title | 'Managing together - Integrating Community-centered, ecosystem-based approaches into forestry, agriculture and tourism' |
| 2. Project Number | 5804 |
| 3. Location (Global/Region/Country) | Sri Lanka |

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

Principles and standards derived from international human rights treaties will guide the project in all phases¹²⁶. The Sri Lankan State has an obligation to 'protect, preserve and improve the environment for the benefit of the community' (Article 27 (14) of the Constitution), while communities also have the duty to 'protect nature and conserve its riches' (Article 28 (f)). Human rights obligations include the duty to ensure the level of environmental protection necessary to allow the full exercise of protected rights. Certain human rights, especially access to information, participation in decision-making, and access to justice in environmental matters are essential to good environmental decision-making.

The Project will:

- a) raise the capacity of government duty-bearers to carry out their obligations under current policy to protect the environment (Outcome 1)
- b) work with local government duty bearers to take tangible steps towards improving environmental protection (Outcomes 2,3,)
- c) feed back project results into changes in national policy and practice (Outcomes 1, 4)
- d) ensure access of the general public in their capacity as rights holders to information related to the environment (Outcomes 2,3,4)
- e) work with the general public in their capacity as both rights holders and duty bearers, to take tangible steps towards improving environmental protection (Outcome 3)
- f) maintain a spotlight on incidences in the project areas where women and disabled people are marginalized (Outcomes 2, 3, 4)
- g) keep attention on socio-economic issues such as chronic debt, land-tenure injustices, public health problems in the Trial Landscapes (Outcomes 2, 3, 4)
- h) link with other projects to encourage government to improve enforcement of environmental laws, in particular regarding trawling in the Gulf of Mannar (Outcomes 1, 2, 3)
- i) screen each and every proposed project intervention for potential human rights impacts (Outcomes 3, 4)

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

The project's environmental objectives will be reached only if women in the project areas are more empowered. This is not a matter of a gender side-effect in an environmental conservation project: rather it is a matter of having to address the marginalization of women in the local communities in order for the project

¹²⁶ <http://web.unep.org/divisions/delc/human-rights-and-environment>

to achieve success. Livelihood-focused interventions and capacity development in the community will not merely take an equitable approach to gender, but will focus on women in particular in order to redress current imbalances in women's access to highly skilled and remunerated work. Women could play a more active role in the political and economic activities within their respective communities. The project will encourage women to participate in decision making. Women's livelihood associations will form the basis for initial project consultations. It is anticipated that jobs that were formerly restricted to men, will have been opened up for women by the end of the project. This will not be a straightforward achievement for it involves decisions on child-care and other care within the family, but it is feasible.

Briefly describe in the space below how the Project mainstreams environmental sustainability

Mainstreaming of biodiversity conservation and environmental sustainability is the prime goal of the Project (see main text of Prodoc). The model is one of capacity development for government officials, demonstrations in Trial Landscapes and Focal Village Clusters, and dissemination of results regionally and nationally. A key component of the project will be public information and involvement, and collaboration with the growing number of projects and programmes that either a) advocate mainstreaming in natural resource management, or b) will benefit from project collaboration with mainstreaming of biodiversity into their economic development interventions.

Part B. Identifying and Managing Social and Environmental Risks

| <p>QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i></p> <p>Risk Description</p> | <p>QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i></p> <p>Impact and Probability (1-5)</p> | <p>QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?</p> <p>Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.</p> |
|--|--|--|
| <p>Risk 1: Livelihood-focused interventions might have deleterious impacts on wild species or habitats in protected areas or areas proposed for protection or recognized as environmentally sensitive or critical</p> <p>Referred to SESP attachment 1: Principle 3, Standard 1 and 2, Questions 1.1 & 2.2</p> | <p>Significance (Low, Moderate, High)</p> <p>Moderate</p> | <p>Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ToC: M8). All project interventions will be developed through long and careful participatory processes with local government, village communities and with partner projects and programmes (see Section III Strategy). Care will be taken to avoid inadvertent impacts on key habitats and species through encouraging influx of people to the sites of livelihood-focused interventions. As the Project has been classified as High Risk (Single High Risk under</p> |

| | | | | |
|---|------------------------|------------------------|--|---|
| <p>Risk 2: Reforestation interventions, whether through natural regeneration or planting, are poorly planned and implemented</p> <p>Referred to SESP attachment 1: Principle 3, Standard 1 and 2, Questions 1.6 & 2.2</p> | <p>I = 3 P = 1</p> | <p>Low</p> | <p>Low probability because there is high level of competence in forestry, but the impact can be high if exotic species used, for example, and the waste of resources can be high if poor consideration given to viability of planting methods.</p> | <p>Standard 5) an ESIA will be conducted and an ESMP prepared and implemented.</p> <p>The project will apply the precautionary approach to any interventions in natural resource management. (see Under Question 5 below)</p> <p>Potential impacts of climate change will be considered carefully in formulation of interventions as an integral part of Project activities and information programmes.</p> <p>Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ToC: M8). Expert consultation with foresters on the relative merits of natural regeneration and various possible planting regimes considering water availability and the use to which the forest will be put (eg wildlife habitat). The Project will not fund reforestation with exotic species and will advocate and demonstrate integrated pest management in place of agrochemical use. As the Project has been classified as High Risk (Single High Risk under Standard 5) an ESIA will be conducted and an ESMP prepared and implemented.</p> |
| <p>Risk 3: Livelihood-focused interventions in fisheries or aquaculture lead to damage to species or habitats</p> <p>Referred to SESP attachment 1: Principle 3, Standard 1 and 2, Questions 1.7 & 2.2</p> | <p>I = 4 P = 2</p> | <p>Moderate</p> | <p>See comment under Risk 1</p> | <p>Potential impacts of climate change will be considered carefully in formulation of interventions as an integral part of Project activities and information programmes.</p> <p>Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ToC: M8). All project interventions will be developed through long and careful participatory processes with local government, village communities and with partner projects and programmes (see III Strategy). As the Project has been classified as High Risk (Single High Risk under Standard 5) an ESIA will be conducted and an ESMP prepared and implemented. The Environmental and Social Management Framework elaborates on how assessment and mitigation of potential impacts will follow UNDP's SES.</p> <p>Actual and potential impacts on natural resources, biodiversity and ecosystem services will be identified and addressed, employing qualified professionals to conduct assessments and to design and implement mitigation and monitoring plans.</p> |

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| <p>Risk 4: Livelihood-focused interventions in non-timber forest products, <i>in-situ</i> or <i>ex-situ</i>, lead to damage to species or habitats</p> <p>Referred to SESP attachment 1: Principle 3, Standard 1 and 2, Questions 1.6 & 2.2</p> | <p>I = 3 P = 3</p> | <p>Moderate</p> | <p>See comment above under Risk 1</p> | <p>Potential impacts of climate change will be considered carefully in formulation of interventions as an integral part of Project activities and information programmes.</p> <p>Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ToC: M8). All project interventions will be developed through long and careful participatory processes with local government, village communities and with partner projects and programmes (see III Strategy). As the Project has been classified as High Risk (Single High Risk under Standard 5) an ESIA will be conducted and an ESMP prepared and implemented. The Environmental and Social Management Framework elaborates on how assessment and mitigation of potential impacts will follow UNDP's SES.</p> <p>The project will avoid making livelihood-focused interventions too near to protected areas or critical habitats, partly to reduce risk from the intervention and partly to discourage influx of others to build on the success of early initiatives.</p> <p>Potential impacts of climate change will be considered carefully in formulation of interventions as an integral part of Project activities and information programmes.</p> |
| <p>Risk 5: Cultural values and norms may be adversely affected by introduction of conventional mass scale tourism</p> <p>Referred to SESP attachment 1: Principle 3, Standard 4, Question 4.2</p> | <p>I = 3 P = 2</p> | <p>Moderate</p> | <p>According to some local community members the social fabric of communities, and some cultural relics such as the Doric Fort at Arippu are likely to be subjected to deleterious impacts as a result of tourism. There are two aspects here: the intangible forms of culture such as practices, representations, expressions, knowledge and skills, and the tangible forms such as immovable objects, buildings and archaeological sites.</p> | <p>The project is designed to deflect conventional tourism options in preference of low-impact eco-tourism models.). As the Project has been classified as High Risk (Single High Risk under Standard 5) an ESIA will be conducted and an ESMP prepared and implemented. The Environmental and Social Management Framework elaborates on how assessment and mitigation of potential impacts will follow UNDP's SES. There will be long and careful discussions with the local people before the project invests in any new tourism development. On the other hand, the project will be very circumspect in its engagement with private enterprise partners to ensure that such partners are genuinely committed to developing enterprises that will provide benefits in the long term through stabilizing impacts of local livelihoods on species and habitats. The Project will anticipate the need for a Cultural Heritage Management Plan as an outcome of the ESIA and ESMP development. Private sector operators will be encouraged to adhere to an agreed management plan for tourist activities at Cultural Heritage sites.</p> |

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| <p>Risk 6: In order to implement the Project's landscape conservation strategic designs, the Government might decide to resettle people currently living in Proposed Elephant Corridors (PECs).</p> <p>Referred to SESP attachment 1: <i>Principle 1, Q.3; Principle 3, Standard 5, Questions 5.1, 5.2, 5.4</i></p> | <p>I = 4 P = 3</p> | <p>High</p> | <p>Two of the three PECs in the Project Trial Landscapes have been proposed under different Projects. Implementation is expected to take place and to be funded by those projects. Precise delineation of any such corridors or forest areas will not be determined until the landscape designs and land use plans are completed by considering all relevant factors during the landscape planning process, so specific details of the need for any such resettlement are not available.</p> | <p>It is not possible at this stage to predict a) whether involuntary resettlements will be included and endorsed under the landscape designs, and b) exactly where and how many people would be involved. No Project funds will be applied to any involuntary relocations, but the causal pathway leading to negative impacts of any such relocations may ultimately be traced back to the landscape designs developed as an integral part of Project activities. A clear course of action is laid down in case involuntary relocations become the recommended course of action under the Project's landscape designs (see Annex E). In view of these circumstances it is clear that the risks of deleterious impacts arising from poorly implemented involuntary relocations taking place in the Trial Landscapes must be addressed proactively. The Project will concentrate on finding solutions that provide for elephant conservation at the same time as ensuring the well-being of local residents and, in particular, avoid involuntary, or indeed voluntary, resettlement. If and when it is decided to pursue any resettlement, or endorse it by association, a full ESIA will be carried out (see end of Annex E) according to standards established in The Sri Lankan National Involuntary Resettlement Policy (NIRP) 2001¹²⁷ OP 4.12, UNDP Social and Environmental Standards (SES)¹²⁸, and the updated GEF policy on environmental and social safeguards¹²⁹.</p> |
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¹²⁷ <http://www.treasury.gov.lk/documents/10181/272149/RPF-NAPPP+-+For+disclosure.pdf/aa720af8-413f-4394-9ec7-1693ff487bc3>

¹²⁸ <http://www.undp.org/content/undp/en/home/learn/operations/1/undp-social-and-environmental-standards.html>

¹²⁹ <http://www.thegef.org/sites/default/files/documents/Policy%20on%20Environmental%20and%20Social%20Safeguards%2C%20DRAFT%20for%20Consultation%2C%202018-08-31.pdf>

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| <p>Risk 7: Participation in community-based planning and implementation is dominated by people from traditionally empowered groups and under-represents women and other marginalized people, including those facing uncertain futures as a result, for example, of poverty, the recent three-year drought, and land-tenure disputes</p> <p>Referred to SESP attachment 1: Principle 2, Question 3</p> | <p>I=3 P=1</p> | <p>Low</p> | <p>Considerable attention has been given to gender matters in project design, and there is already a full Gender Action Plan, but a low risk remains that women will be underrepresented in decision making and as implementers of project activities.</p> | <p>In the meantime the project will include as part of its already planned extensive community engagement a process for vetting options on addressing human-elephant conflict issues, which may include community-determined restrictions on natural resource access and potential voluntary relocation agreements where appropriate.</p> <p>An ESMF has been prepared as a guide by which to assess the actions of government of other donor agencies that may implement involuntary relocations. When appropriate, the ESMF will guide the conduct of an ESIA and the preparation of an ESMP, and in the event of economic or physical displacement becoming likely, LAP and RAPs will be prepared as necessary as a basis to guide and advise government on measures to reduce potential involuntary resettlement as part of both the landscape planning and the implementation of the resulting landscape designs, including dealing with the risks of economic displacement and requirement for livelihood restoration.</p> <p>Project staff will be well trained in community-centred participatory processes and will live on site full time in the communities they are working with, thus building up understanding of social pressures and how to address them in the context of the project. Participatory mechanisms will be slow in pace and will focus on ensuring that there is no "elite capture" of community benefits, and that traditionally less-empowered groups of society are engaged. The Project has prepared a comprehensive Gender Action Plan to achieve equitable participation in decision making and action for women in all aspects of the Project and its implementation will be given high priority.</p> |
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QUESTION 4: What is the overall Project risk categorization?

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| Select one (see SESP for guidance) | | Comments |
| Low Risk | <input type="checkbox"/> | |
| Moderate Risk | <input type="checkbox"/> | |

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| | <p>High Risk</p> <p><input checked="" type="checkbox"/></p> | <p>A total of seven risks have been identified, of which one has been assessed as high, four moderate and two of low significance. The following safeguards are triggered (high risks): Principle 1: Human Rights, Principle 3, Standard 5 – Displacement and Resettlement; (Moderate risks): Principle 3, Standard 1: Biodiversity Conservation and Natural Resource Management; Standard 2: Climate Change Mitigation and Adaptation; and Standard 4: Cultural Heritage</p> <p>The overall project risk categorization is 'High'. Accordingly, an ESMF has been prepared to specify the processes that will be undertaken for the additional assessment of potential impacts, identification and development of appropriate risk management measures.</p> |
| <p>QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?</p> | | |
| <p>Check all that apply</p> | | |
| | <p>Principle 1: Human Rights</p> | <p><input checked="" type="checkbox"/></p> <p>Linked to the potential for physical resettlement and economic displacement under Standard 5 SE Risk No. 6 High</p> |
| | <p>Principle 2: Gender Equality and Women's Empowerment</p> | <p><input checked="" type="checkbox"/></p> <p>Linked to the possibility that the Project's considerable efforts under its Gender Action Plan to achieve equitable participation in decision making and action for women in all aspects of the Project might fall short of expectations SE Risk No. 7 Low</p> |
| | <p>Principle 3: Environmental Sustainability</p> | <p><input checked="" type="checkbox"/></p> |

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| | <p>1. Biodiversity Conservation and Natural Resource Management</p> | <input checked="" type="checkbox"/> | <p>The project will apply the precautionary approach to any interventions in natural resource management. Actual and potential impacts on natural resources, biodiversity and ecosystem services will be identified and addressed, employing qualified professionals to conduct assessments and to design and implement mitigation and monitoring plans. The project will be wary of making livelihood-focused interventions too near to protected areas or critical habitats, partly to reduce risk from the intervention and partly to discourage influx of others to build on the success of early initiatives. SE Risk Nos 1,3,4 (Medium) and Risk No. 2 (Low)</p> |
| | <p>2. Climate Change Mitigation and Adaptation</p> | <input checked="" type="checkbox"/> | <p>Although climate change will be taken into account in the conservation designs and land-use plans produced and partially implemented under the project, there is still a possibility for frustration of intermediate project aims as a result of unpredicted weather events. SE Risk Nos 1,3,4 (Medium)</p> |
| | <p>3. Community Health, Safety and Working Conditions</p> | <input type="checkbox"/> | |
| | <p>4. Cultural Heritage</p> | <input checked="" type="checkbox"/> | <p>According to some local community members the social fabric of communities, and some cultural relics such as the Doric Fort at Arrippu are likely to come under threat from tourism. So there are two aspects here: the intangible forms of culture such as practices, representations, expressions, knowledge and skills⁹⁷, and the tangible forms such as immovable objects, buildings and archaeological sites⁹⁷. The project will take all necessary measures to avoid significant adverse impacts, selecting private sector partners in tourism with this requirement in mind. The Project will anticipate the need for a Cultural Heritage Management Plan as an outcome of the ESIA and ESMP development.</p> |
| | <p>5. Displacement and Resettlement</p> | <input checked="" type="checkbox"/> | <p>Unlikely to take place under the project but impact is potentially high so full ESIA will be commissioned if and when displacement and or resettlement is proposed as a means of facilitating use of the landscape by both humans and elephants and other wild species. Every effort will be made to avoid resettlement of people and if firm proposals are made, the project will assist government to assess impacts through a survey of potential PAPs, publish justification for the resettlement plan well in advance, and continue to monitor social and environmental impacts after resettlement at sites of both destination and origin. SE Risk No 6 (High)</p> |

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| | <input type="checkbox"/> |
| 6. Indigenous Peoples | <input type="checkbox"/> |
| 7. Pollution Prevention and Resource Efficiency | <input type="checkbox"/> |

Final Sign Off

| Signature | Date | Description |
|------------------|-------------|---|
| QA Assessor | | UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted. |
| QA Approver | | UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC. |
| PAC Chair | | UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC. |

SESP Attachment 1. Social and Environmental Risk Screening Checklist

| Checklist Potential Social and Environmental Risks | | Answer (Yes/No) |
|---|--|----------------------------|
| Principles 1: Human Rights | | |
| 1. | Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups? | No |
| 2. | Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? ¹³⁰ | No |
| 3. | Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups? | Yes |
| 4. | Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them? | No |
| 5. | Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project? | No |
| 6. | Is there a risk that rights-holders do not have the capacity to claim their rights? | No |
| 7. | Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process? | No |
| 8. | Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals? | No |
| Principle 2: Gender Equality and Women's Empowerment | | |
| 1. | Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls? | No |
| 2. | Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits? | No |
| 3. | Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment? | Yes |
| 4. | Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i> | No |

¹³⁰ Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

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| Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below | | |
| Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management | | |
| 1.1 | Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i> | Yes |
| 1.2 | Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities? | Yes |
| 1.3 | Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5) | No |
| 1.4 | Would Project activities pose risks to endangered species? | No |
| 1.5 | Would the Project pose a risk of introducing invasive alien species? | No |
| 1.6 | Does the Project involve harvesting of natural forests, plantation development, or reforestation? | Yes |
| 1.7 | Does the Project involve the production and/or harvesting of fish populations or other aquatic species? | Yes |
| 1.8 | Does the Project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i> | No |
| 1.9 | Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development) | No |
| 1.10 | Would the Project generate potential adverse transboundary or global environmental concerns? | No |
| 1.11 | Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i> | No |
| Standard 2: Climate Change Mitigation and Adaptation | | |
| 2.1 | Will the proposed Project result in significant ¹³¹ greenhouse gas emissions or may exacerbate climate change? | No |
| 2.2 | Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change? | Yes |
| 2.3 | Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i> | No |
| Standard 3: Community Health, Safety and Working Conditions | | |
| 3.1 | Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities? | No |

¹³¹ In regards to CO₂, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

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| 3.2 | Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)? | No |
| 3.3 | Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)? | No |
| 3.4 | Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure) | No |
| 3.5 | Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions? | No |
| 3.6 | Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)? | No |
| 3.7 | Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning? | No |
| 3.8 | Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)? | No |
| 3.9 | Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)? | No |
| Standard 4: Cultural Heritage | | |
| 4.1 | Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts) | No |
| 4.2 | Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes? | Yes |
| Standard 5: Displacement and Resettlement | | |
| 5.1 | Would the Project potentially involve temporary or permanent and full or partial physical displacement? | Yes |
| 5.2 | Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)? | Yes |
| 5.3 | Is there a risk that the Project would lead to forced evictions? ¹³² | No |
| 5.4 | Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources? | Yes |
| Standard 6: Indigenous Peoples | | |
| 6.1 | Are indigenous peoples present in the Project area (including Project area of influence)? | No |
| 6.2 | Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples? | No |
| 6.3 | Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? <i>If the answer to the screening question 6.3 is “yes” the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i> | No |
| 6.4 | Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned? | No |

¹³² Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

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| 6.5 | Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples? | No |
| 6.6 | Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? | No |
| 6.7 | Would the Project adversely affect the development priorities of indigenous peoples as defined by them? | No |
| 6.8 | Would the Project potentially affect the physical and cultural survival of indigenous peoples? | No |
| 6.9 | Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices? | No |
| Standard 7: Pollution Prevention and Resource Efficiency | | |
| 7.1 | Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts? | No |
| 7.2 | Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)? | No |
| 7.3 | Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i> | No |
| 7.4 | Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health? | No |
| 7.5 | Does the Project include activities that require significant consumption of raw materials, energy, and/or water? | No |

Annex H: UNDP Risk Log

Note: Red = High Risk, Yellow = Medium Risk, Green = Low Risk

| Risk No. | Description | Date Identified | Type | Impact & Probability | Mitigation measures (see Annex E SESP for more details) | Owner | Submitted, updated by | Last Update | Status |
|----------|---|------------------|----------------------------------|----------------------|--|-------|-----------------------|-------------|--------|
| 1 | Institutional inertia and administrative inflexibility hinders a) cross-sectoral and trans jurisdictional collaboration b) enhanced implementation of existing legislation to provide necessary back-up for project interventions at village and landscape level c) adoption of policy recommendations and pre-service and in-service training modules d) establishment and financing of post-project monitoring protocol | 20 December 2018 | Political, Regulatory, Financial | P:2 I:4 | Action on enabling central government directives (Output 1.1) will be monitored, and reinforced where necessary. The project's approach will be slow and patient, with the Project Management Office and full time Project staff based in the project landscape. If progress is insufficient UNDP CO is ready to step in with high level representations and project funding could be suspended according to UNDP-GEF procedures (PIR, MTR). Districts will facilitate this. | | | | |
| 2 | The other programmes, projects and private-sector enterprises with which the Project has agreed close collaboration under Output 1.3 do not invest sufficient time and other resources in consultations, coordination, communication and cooperation | 20 December 2018 | Operational | P:2 I:4 | UNDP will increase communication and involvement with the concerned organizations well before Project Inception so that by the time of Inception there is full understanding of the need for collaboration. The Project will ensure that momentum is maintained, taking the lead whenever necessary to keep links active, interesting and productive. Project Office and project staff based full time in the project Districts will facilitate this. | | | | |

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| 3 | Public information and involvement programmes are not sustained after the end of the project | 20 December 2018 | Operational | P:3 I:3 | Printed and audio-visual (videos, for example) materials for learning and communication are insufficient to ensure continuation of public information and involvement programmes, so the Project will emphasize training in the skills required to develop and deliver them and will work with MMDE to ensure that such capacity is available post-project. BIOFIN is an important partner in this respect. | | | | |
| 4 | Technological constraints at local level limits use of GIS for the strategic design | 20 December 2018 | Operational | P:3 I:2 | The project will use traditional mapping, including 3D modelling alongside GIS | | | | |
| 5 | Local residents do not feel sufficiently involved and valued, are sceptical as a result of being exposed other projects that led to unrealistic expectations, and find that the Project's livelihood-focused interventions produce results too slowly to persuade people to continue with changed behaviour beyond the end of the project | 20 December 2018 | Social, Operational | P:2 I:3 | The Project will monitor feelings of involvement, strengthen public information and involvement programmes as appropriate (e.g. arrange visits between focal and non-focal Village Clusters), and modify the participatory methods if indicated. The full time resident staff in each of the three Trial Landscapes will communicate constantly, and will demonstrate an environmentally friendly, sometimes self-sacrificing, approach by establishing a low carbon footprint - low use of plastics, sensible use of fuel and electricity, attention to sewage and solid waste disposal in project operations. | | | | |
| RISKS IDENTIFIED BY THE SOCIAL AND ENVIRONMENTAL SCREENING PROCEDURE (ANNEX E) | | | | | | | | | |

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| Risk 6 SER1 * | Livelihood-focused interventions might have deleterious impacts on wild species or habitats in protected areas or areas proposed for protection or recognized as environmentally sensitive or critical | 20 December 2018 | Social, Environmental | P:2 I:4 | Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ThOCh: M8). All project interventions will be developed through long and careful participatory processes with local government, village communities and with partner projects and programmes (see III Strategy). Care will be taken to avoid inadvertent impacts on key habitats and species through encouraging influx of people to the sites of livelihood-focused interventions. | | | | |
| Risk 7 SER2 * | Reforestation interventions, whether through natural regeneration or planting, are poorly planned and implemented | 20 December 2018 | Social, Environmental | P:2 I:2 | Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ThOCh: M8). Expert consultation with foresters on the relative merits of natural regeneration and various possible planting regimes considering water availability and the use to which the forest will be put (eg wildlife habitat). | | | | |
| Risk 8 SER3 * | Livelihood-focused interventions in fisheries or aquaculture lead to damage to species or habitats | 20 December 2018 | Social, Environmental | P:2 I:4 | Project design includes mitigation of this risk through environmental and social assessment of each and every project intervention (see ThOCh: M8). All project interventions will be developed through long and careful participatory processes with local government, village communities and with partner projects and programmes (see III Strategy). | | | | |
| Risk 9 SER4 * | Livelihood-focused interventions in non-timber forest products, <i>in-situ</i> or <i>ex-situ</i> , lead to damage to species or habitats | 20 December 2018 | Social and Environmental | P:3 I:3 | See management measures under Risk 3 | | | | |

| | | | | | | | |
|--------------------------|---|-------------------------|---------------------------------|----------------|--|--|--|
| <p>Risk 10 SER5*</p> | <p>Cultural values may be adversely affected by introduction of tourism</p> | <p>20 December 2018</p> | <p>Social and Environmental</p> | <p>P:2 I:3</p> | <p>On the one hand there will be long and careful discussions with the local people before the project invests in any new tourism development. On the other hand, the project will be very circumspect in its engagement with private enterprise partners to ensure that such partners are genuinely committed to developing enterprises that will provide benefits in the long term through stabilizing impacts of local livelihoods on species and habitats.</p> | | |
| <p>Risk 11 SER6*</p> | <p>Risk 11: In order to implement the Project's landscape conservation strategic designs, government decides on involuntary resettlement of people from proposed elephant corridors and other forest areas and as a result the Project becomes associated with any consequent negative impacts.</p> | <p>20 December 2018</p> | <p>Social and Environmental</p> | <p>P:3 I:4</p> | <p>It is impossible to predict a) whether resettlements will be required, and b) where and how many people might be involved but a clear course of action is laid down in case resettlements become the preferred course of action (see Annex E). The Project will first make every effort to find solutions that provide for elephant conservation at the same time as ensuring the well-being of local residents and, in particular, avoid involuntary, or indeed voluntary, resettlement. If and when it is decided to pursue resettlement, or endorse it by association, a full ESIA will be carried out (see end of Annex E) according to standards established in The Sri Lankan National Involuntary Resettlement Policy (NIRP) 2001ⁱ, OP 4.12, UNDP Social and Environmental Standards (SES)ⁱⁱ, and the updated GEF policy on environmental and social safeguardsⁱⁱⁱ.</p> | | |

| | | | | | | | | |
|---------------------------------|--|-------------------------|---------------|----------------|--|--|--|--|
| <p>Overall Risk 12 SER7</p> | <p>Participation in community-based planning and implementation is dominated by people from traditionally empowered groups and under-represented women and other marginalized people, including those facing uncertain futures as a result, for example, of poverty, the recent three year drought, and land-tenure disputes</p> | <p>20 December 2018</p> | <p>Social</p> | <p>P:1 I:3</p> | <p>Project staff will be well trained in community-centred participatory processes and will live on site full time in the communities they are working with, thus building up understanding of social pressures and how to address them in the context of the project. Participatory mechanisms will be slow in pace and will focus on ensuring that there is no "elite capture" of community benefits, and that traditionally less-empowered groups of society are engaged.</p> | | | |
|---------------------------------|--|-------------------------|---------------|----------------|--|--|--|--|

* SER = Social and Environmental Risk and the number refers to the Risks given in the SESP (Annex E)

Annex C: Overview of Technical Consultancies

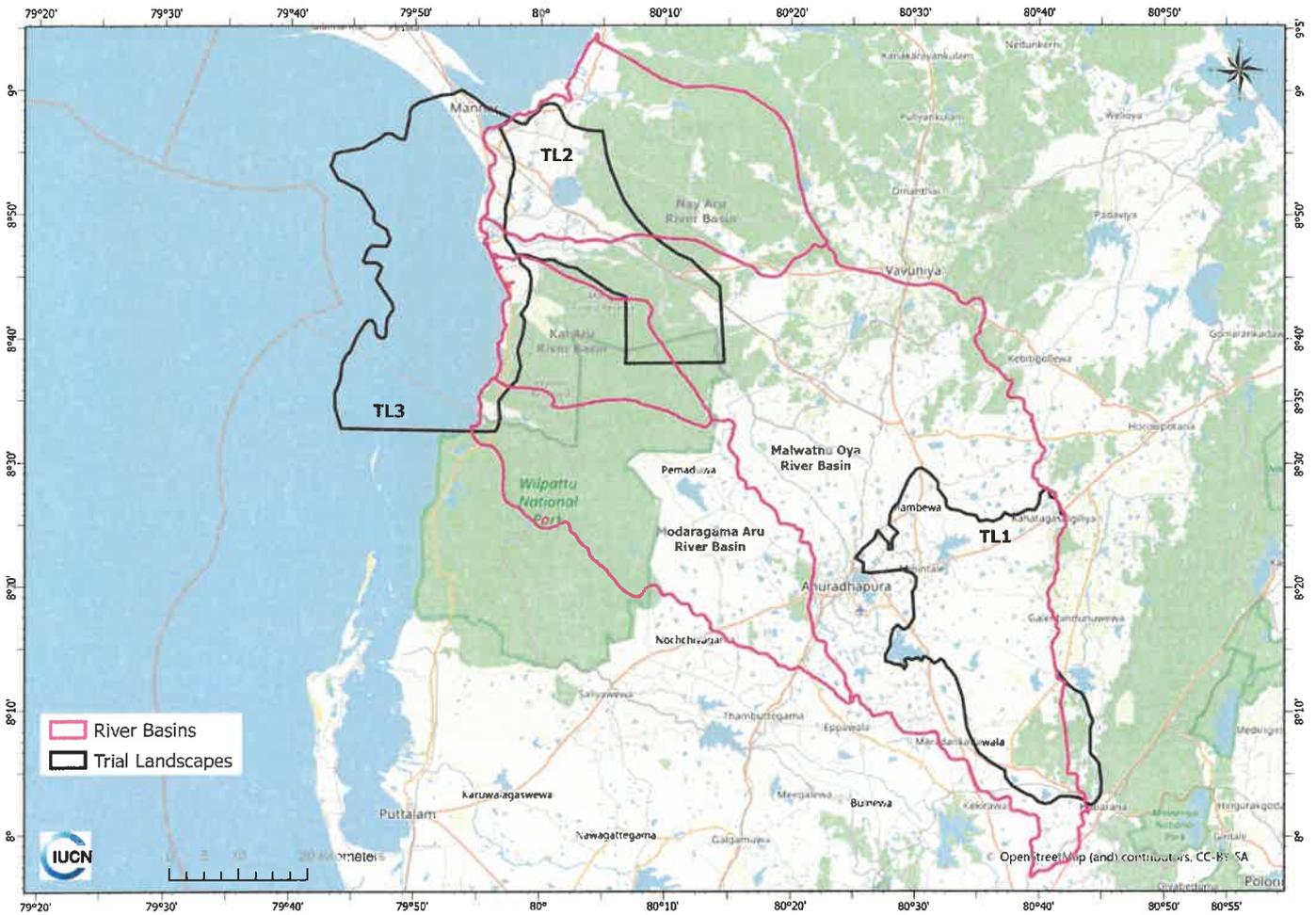
| Consultant | Time Input | Tasks, Inputs and Outputs |
|---|--|---|
| For Project Management and Overall Technical Direction | | |
| Local / National contracting | | |
| Project Manager (PM) Duty Station: Mannar, with frequent travel to Colombo, Anuradhapura and all three Trial Landscapes Rate: US\$2,250 per month | 48 months | The Project Manager (PM), together with the Senior Technical Adviser (STA) will be responsible for the overall management of the project, including the mobilization of all project inputs, supervision over project staff, consultants and sub-contractors. |
| Senior Technical Advisor (STA) Duty Station: Mannar, with frequent travel to Colombo, Anuradhapura and all three Trial Landscapes Rate: US\$2,250 per month | 48 months (nominally 4 months under Project Management, and 44 months under the individual Outcomes - see below) | The Senior Technical Adviser (STA) will be responsible for providing overall technical advice and management support to the entire Project. Will take the lead in particular on the Landscape Conservation Design (Outcome 2), but will organize and participate in all aspects of the project, including the commissioning and oversight of biophysical and socio-economic research under Outputs 2.3 and 3.3, and the oversight of the work of other Project staff engaged primarily under Outcomes 1, 3 and 4. |
| Project Officer (PO) Rate US\$1,500 per month | 48 months part time; | The Project Officer will assist with project assurance and project management at the Colombo base, Support the Project Manager and Senior Technical Advisor in monitoring of the project activities; providing technical guidance on incorporation of gender and social inclusiveness aspects and overall safeguards to the project activities |
| Project Assistant (PA) Rate: US\$1,200 per month | 48 months | The Project Assistant and Interpreter will assist in the PMO and at the field sites in administrative, practical tasks as well as with a reasonable amount of translation and interpretation when required. |
| Finance and Procurement Officer (FPO) Rate: US\$1,500 per month. (Cost sharing basis- only 750 US\$ per month will be charged to the project). | 48 months | The FPO will support project implementation with financial accounting; maintaining all the financial records; supporting the annual audit; implementing procurement in collaboration with the Project Manager according to the applicable guidelines; preparing financial reports |
| For Specific Technical Assistance | | |
| Across all Outcomes | | |
| Local / National contracting | | |
| Learning and Communications Officer (LCO) Duty Station: Mannar, with frequent travel to Colombo, Anuradhapura and all three Trial Landscapes Rate: US\$1200 per month | 48 months | The Learning and Communications Officer (LCO) will be responsible for all information and involvement programmes under the Project, in particular the design and delivery of Outputs 2.1, 3.1, 4.3, 4.4 and 4.5, and will liaise with all project officers and consultants, and with partners (projects and programmes) to deliver Output 1.3 Will maintain the Stakeholder Engagement Framework and draw up and implement the Project Knowledge Management and Communication Strategy |

| Consultant | Time Input | Tasks, Inputs and Outputs |
|--|---|---|
| <p>Eight to ten short term consultants Duty Stations: TBD according to needs Rate: US\$1500 to US\$3000 per month <i>pro rata</i> depending on qualifications and duration of contract</p> | <p>As required: estimated one to two months per year for between one and four years</p> | <p>Specific tasks as required. Will include specialists in tourism, agriculture, forestry, fisheries, birds, elephants, sociology, gender, meeting facilitation and others</p> |
| For Specific Technical Assistance | | |
| Outcome 1 | | |
| Local / National contracting | | |
| <p>Training Needs Assessor (TNA) Duty Station: Colombo, with travel to Mannar and Arunadhapura as necessary Rate: US\$ 1,600 per month</p> | <p>6 months (Year 1)</p> | <p>Under supervision of Senior Technical Advisor (STA) and Project Manager (PM) carry out training needs assessment for mainstreaming of biodiversity and compare, using Gap Analysis, with the training currently available in government in-service and pre-service training institutions and in universities (Output 1.1).</p> |
| <p>Curriculum Developer (CD) Duty Station: Colombo, with travel to Mannar and Arunadhapura as necessary Rate US\$1,600 per month</p> | <p>12 months (Six months per year in Years 1,2)</p> | <p>Under supervision of Senior Technical Advisor (STA) and Project Manager (PM) and in collaboration with the Training Needs Assessor (TNA), develop modules and mechanisms to fill the gaps demonstrated in the Training Gap Analysis and train teachers in their use (Output 1.2)</p> |
| Outcome 2 | | |
| Local / National contracting | | |
| International / Regional and global contracting | | |
| <p>International Landscape Conservation Advisor (ILCA) Duty Station: Mannar District, with travel to all three Trial Landscapes Rate: US\$ 10,000 per month (inclusive)</p> | <p>2 months (2 months Year 2)</p> | <p>In close coordination with the Project Manager (PM), the Senior Technical Adviser (STA) and the Landscape Conservation Planner (LCP), will provide international perspective, strategic guidance and technical inputs to the implementation of activities under Outputs 2.1, 2.2, 2.3, 2.4, 2.5.</p> |
| Outcome 3 | | |
| Local / National contracting | | |
| <p>Upper Malwathu Community-based conservation expert (UMCCE) Duty Station: Ritigala Rate: US\$1,400 per month</p> | <p>48 months</p> | <p>In close coordination with the Project Manager (PM), the Senior Technical Adviser (STA), the International Landscape Conservation Design Adviser (ILCA), the Landscape Conservation Planner (LCP) and the Learning and Communication Officer (LCO), will oversee, in Trial Landscape 1, the development and implementation of participatory consultation within communities and between communities and local government, the development of village-cluster level land-use plans and technical and material support for livelihood-focused project interventions in natural resource management (Outputs 3.1, 3.2, 3.3, 3.4, 3.5)</p> |

| Consultant | Time Input | Tasks, Inputs and Outputs |
|--|------------|--|
| <p>Lower Malwathu Community-based conservation expert (LMCCE) Duty Station: Madhu Rate: US\$1,400 per month</p> | 48 months | <p>In close coordination with the Project Manager (PM), the Senior Technical Adviser (STA), the International Landscape Conservation Design Adviser (ILCA), the Landscape Conservation Planner (LCP) and the Learning and Communications Officer (LCO), will oversee, in Trial Landscape 2, the development and implementation of participatory consultation within communities and between communities and local government, the development of village-cluster level land-use plans and technical and material support for livelihood-focused project interventions in natural resource management (Outputs 3.1, 3.2, 3.3, 3.4, 3.5)</p> |
| <p>Malwathu Estuary Community-based conservation expert (MECCE) Duty Station: Arippu Rate: US\$1,400 per month</p> | 48 months | <p>In close coordination with the Project Manager (PM), the Senior Technical Adviser (STA), the International Landscape Conservation Design Adviser (ILCA), the Landscape Conservation Planner (LCP) and the Learning and Communications Officer (LCO), will oversee, in Trial Landscape 3, the development and implementation of participatory consultation within communities and between communities and local government, the development of village-cluster level land-use plans and technical and material support for livelihood-focused project interventions in natural resource management (Outputs 3.1, 3.2, 3.3, 3.4, 3.5)</p> |
| International / Regional and global contracting | | |
| Outcome 4 | | |
| Local / National contracting | | |
| <p>Mid-term Review Consultant Duty Station: Home based with one trip to Colombo, Mannar, Arundhapura and selected field sites Rate: US\$10,000 inclusive</p> | ca 1 month | <p>Review the Project results against the project document and advise the project board on best possible ways to ensure the achievement of the project objective; Assess the opportunities, threats, weaknesses and strengths of the project after two years of implementation and recommend revisions to the project approach if necessary.</p> |
| <p>Terminal Evaluation Consultant Duty Station: Home based with one trip to Colombo, Mannar, Arundhapura and selected field sites Rate: US\$15,000 inclusive</p> | ca 1 month | <p>Assess the level of achievement against project objective and outcomes; Assess the comparative strengths and weaknesses of the project and make recommendations for future interventions</p> |
| International / Regional and global contracting | | |
| <p>Mid-term Review Team Leader Duty Station: Home based with one trip to Colombo, Mannar, Arundhapura and selected field sites Rate: US\$20,000 inclusive</p> | ca 1 month | <p>Review the Project results against the project document and advise the project board on best possible ways to ensure the achievement of the project objective; Assess the opportunities, threats, weaknesses and strengths of the project after two years of implementation and recommend revisions to the project approach if necessary.</p> |
| <p>Terminal Evaluation Consultant Duty Station: Home based with one trip to Colombo, Mannar, Arundhapura and selected field sites Rate: US\$30,000 inclusive</p> | ca 1 month | <p>Assess the level of achievement against project objective and outcomes; Assess the comparative strengths and weaknesses of the project and make recommendations for future interventions</p> |

Annex AA: Project Map and geospatial coordinates of the project area

Project Map:



The Malwathu Oya and three other small river basins have completely covered the project area, the coordinates of several locations around the river basins are as follows.

- P1 - 80° 5.598'E, 9° 4.007'N
- P2 - 80° 36.311'E, 8° 43.153'N
- P3 - 80° 41.090'E, 7° 56.032'N
- P4 - 80° 18.185'E, 8° 13.665'N
- P5 - 79° 55.316'E, 8° 31.136'N
- P6 - 79° 43.330'E, 8° 33.842'N
- P7 - 79° 49.465'E, 8° 59.492'N



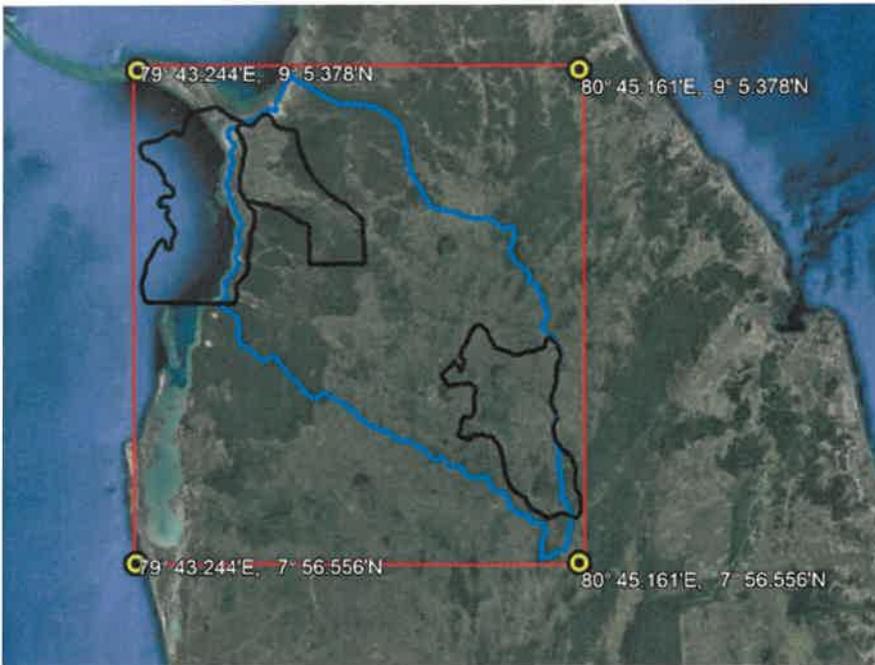
The four corners of the rectangle, which cover the project area:

North east - 80° 45.161'E, 9° 5.378'N

South east - 80° 45.161'E, 7° 56.556'N

Southwest - 79° 43.244'E, 7° 56.556'N

Northwest - 79° 43.244'E, 9° 5.378'N



Annex AB: Monitoring Plan:

This Monitoring Plan and the M&E Plan and Budget in Section VI of this project document will both guide monitoring and evaluation at the project level for the duration of project implementation.

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹³³ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|---|---|---|--|---|---|-----------|------------------------------------|---|---|
| | | Mid term | End of the project | | | | | | |
| Objective: To strengthen protection of globally significant biodiversity through mainstreaming of conservation and sustainable practices into land use planning and sectoral decision making in forestry, agriculture and tourism sectors | Indicator 1 Area of land and marine habitat (protected and non-protected) administered under a landscape conservation design that mainstreams biodiversity conservation into natural resource management (hectares) | Land 80,000 (TL1 44,000 + TL2 27,000 + TL3 9,000) Marine (TL3) 20,000 Protected and non-protected – TBD (data will be available by end of 2020) | Land 155,000 ha (TL1 87,000 + TL2 53,000 + TL3 15,000) Marine (TL3) 55,000 Protected and non-protected - TBD | Ha of land space coming under protection according to the wildlife act fulfill requirements of wildlife species, human via biodiversity mainstreaming for protected area and buffer areas (non protected) which is administered under the landscape conservation design and management. | Secondary – DSD and District Coordinating committee Meeting Minutes Draft and Final Strategic Design from authorities. Government Memos | Annually | National Project Coordinator, UNDP | Valid legal notice (eg. Gazette, Cabinet Memo etc.) End of the project declared the area protected by either single or multiple government mandated agency/ies | Risks: Political will, both at national and sub-national levels is insufficient to drive the landscape approach forward Assumptions: Ministry of Environment and Wildlife Resources builds the necessary support for the project's marine and terrestrial work in the three Trial Landscapes by the time of project inception. |
| | Indicator 2 The number of people, disaggregated by gender, that have benefitted | Male 500 Female 500 | Male 1,600 Female 1,600 | People benefited by livelihood projects which complements biodiversity mainstreaming, including gender segregation, this will incorporate with the all level of integrated | Data sources: Primary - The beneficiaries will be measured through Focus Group Discussions and Sample Surveys | Annually | National Project Coordinator, UNDP | Resource profiles from EDOs and GS, consolidate | Risk: Data gaps exists at field level including variations between GS and EDOs. Assumption: |

¹³³ Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹³³ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|------------|--|---|---|---|---|-----------|------------------------------------|---|---|
| | | Mid term | End of the project | | | | | | |
| | monetarily, from project-induced changes in livelihoods. | | | planning such as national/provincial level to three trial landscapes level. | Secondary – Project distribution documents, and resource profiles. | | | d report on Livelihood. Bi-annual progress review on gender action plan | Data will be made available through external resource profiles. |
| | Indicator 3 Area of tropical dry forest and mangrove in the three Trial Landscapes restored and rehabilitated (improved) under a landscape conservation design (hectares (UNDP reference- Contributes to IRRF indicator 1.4.1.2 C Number of shared water ecosystems – fresh or marine- under cooperative management | 6,000 Tropical Dry Forest: TL1 2,500 TL2 3,000 TL 3 500 Mangrove TL3 20 | 21,000 Tropical Dry Forest: TL1 8,950 TL2 8,950 TL 3 3,000 Mangrove TL3 100 | Area of dry forest and mangrove patches which is rehabilitated, and area of deforestation landscape reforested which is also included in the forest dept's annual restoration plan covering the three trial landscapes. | Secondary - Annual reports of Forest Department & Wildlife Primary - Surveys | Annually | National Project Coordinator, UNDP | Annual reports of Forest Department & Wildlife. Survey documents | Risks: Political will, both at national and sub-national levels is insufficient to drive the landscape approach forward Assumptions: Ministry of Environment and Wildlife Resources builds the necessary support |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹³³ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|--|---|------------------------------------|------------------------------------|--|--|-----------|------------------------------------|---|--|
| | | Mid term | End of the project | | | | | | |
| Outcome 01 An enabling environment to mainstream integrated approaches into natural resource management in production sectors and landscapes | Indicator 4 Number of sectoral and vocational training institutions that have adopted modules on mainstreaming of biodiversity into natural resource management, tourism and other economic development | 4 | 9 | Training modules in relation to biodiversity conservation to be adapted by vocational training institutes coming under wildlife, and government authorities to enhance capacity on biodiversity mainstreaming and natural resource management, tourism and other economic development aspects. | Secondary - Copies of the curricula of the training institutions | Annually | National Project Coordinator, UNDP | Agreements, emails, and other written documents | Risks: Institutional constraints in administration leads to slow uptake of the modules even though there is clear intention to include them in curricula Assumptions: Institutions collaborate with the project |
| | | District 22/45 Divisional 17/45 | District 30/45 Divisional 30/45 | | | | | | |
| Outcome 2: Natural resource | Indicator 6 | 0 | 18,824 ha | Ha of high conservation value forest which is | Source documents approved including | Annually | National Project | Multiple sources to | Risks: |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹³³ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|--|---|------------|--------------------|---|--|-----------|------------------------------------|---|--|
| | | Mid term | End of the project | | | | | | |
| management, tourism and land use are guided by a strategic design for biodiversity conservation and sustainable livelihoods across multiple jurisdictions in three Landscapes in the Northern and Central Provinces. | Area of High Conservation Value Forest that is under improved management to benefit biodiversity under landscape conservation designs in the three Trial Landscapes (hectares) (equivalent to GEF Core Indicator 4.1 but excluding the 1,219 ha of Forest Plantation) | | | identified by Forest dept, and dept wildlife conservation Target coverage hectares under First proposed Elephant Corridor in TL1 Second proposed Elephant Corridor in TL1 Areas expected to match ESA criteria in TL1 Forest plantations in TL1 Proposed Elephant Corridor in TL2 Areas expected to match ESA criteria in TL2 Areas expected to match ESA criteria in TL3 | decisions verified at Provincial Government level. | | Coordinator, UNDP | verify such as Approved Management Plans, Gazetted areas, individual reports generated by the project | Decisions may not be carried through in practice, but this indicator focuses on securing protection of some kind on paper Assumptions: Provincial government supports the decisions made during the landscape conservation design work at the Trial Landscapes/District level |
| | Indicator 7 Annual percentage of Minor and Major Permit applications in which biodiversity impact criteria used in decisions by Coast | TBD | TBD | This indicator needs to be decided at the inception workshop including its definition. | Examination of applications and judgements/ responses. See: http://www.coastal.gov.lk/downloads/pdf/Permit%20Guideline.pdf and http://cmsdata.iucn.org/downloads/proceedings_of_the_workshop_on_ecological_considerations_in_c | Annually | National Project Coordinator, UNDP | | Risks: Ambiguity in the documentation Assumptions: Access to all required documentation |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹³³ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|------------|---|----------|--------------------|---|--|-----------|------------------------------------|---|---|
| | | Mid term | End of the project | | | | | | |
| | Conservation Department in Trial Landscape 3 | | | | oastal_development.pdf (page 58) | | | | |
| | Indicator 8 Mean score (+/- SD) on a standard environmental/biodiversity impact assessment score card modified for the project, of tourism operations (a) marine-based (b) land-based in the three Trial Landscapes | TBD | TBD | Mean score on a standard environmental biodiversity impact for the three landscapes covering land and marine biodiversity calculated according to the Biodiversity Assessment Calculator | Scorecard completed by independent consultant https://www.lmbc.nsw.gov.au/bamcalc | Annually | National Project Coordinator, UNDP | Environmental/biodiversity impact assessment score sheet and analysis document. | Risks: Unexpected difficulties on the application of the scorecard Assumptions: (i) Good cooperation from local communities in answering questions and providing information. (ii) Adequate time assigned for verification |
| | Indicator 9 Estimate of the annual amount of carbon (tCO2eq) sequestered/emissions avoided over the twenty years following the project's inception taking into account progress on the | 889058 | 889058 | Carbon sequestration for agriculture, calculated for estimated years for a landscape-scale greenhouse gas (GHG) assessment of activities in agriculture and forestry. It is based on a technical report published by FAO which includes appendices with all resource material and descriptions of the individual calculators. | http://ird.t-t-web.com/ | Annually | National Project Coordinator, UNDP | Recalculation with updated information according to the approach in Annex B | Risks: Inherent uncertainties about future events Assumptions: Targets based on the assumption that the strategic design is adopted (Baseline and Mid-term estimates) and followed (End of Project estimate). Good cooperation with communities and |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹³³ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|--|--|----------|--------------------|---|---|-----------|------------------------------------|---|--|
| | | Mid term | End of the project | | | | | | |
| | development, adoption, and implementation of the strategic designs at the heart of the project. | | | | | | | | local government, and thorough marine and terrestrial surveys and mapping/satellite imagery analysis |
| Outcome 3 Biodiversity conservation priorities shape sustainable livelihoods in natural resource management and tourism in six Focal Village Clusters in three Northern Landscapes in the North and Central Provinces. | Indicator 10 Area of land in production systems under sustainable land management compatible with biodiversity conservation (hectares) | 15000 ha | 50406 ha | Following extents of land area will be benefited from the sustainable land use practices compatible with biodiversity conservations # no of hectares Sustainable Forest Management, GAP (good agricultural practices) and nature-friendly tourism, in TL1 Sustainable Forest Management, GAP (good agricultural practices) and nature-friendly tourism, in TL2 Sustainable Forest Management, GAP (good agricultural practices) and nature-friendly tourism, in TL3 | The reports generated by Department of Agriculture, Forest Department or combine physical delivery report authorized by integrated agency coordination and administration committee to be established or supported by the project scorecard . See Annex Z and Bucket et al. 2006 https://www.researchgate.net/publication/237228931_UNDERSTANDING_EC OAGRICULTURE_A_FRAMEWORK_FOR_MEASURING_LANDSCAPE_PERFORMANCE | Annually | National Project Coordinator, UNDP | Combined delivery report from Forest Dept and Agriculture annex Z | Risks: Unexpected difficulties on the application of the scorecard Assumptions: (i) Good cooperation from local communities in answering questions and providing information. (ii) Adequate time assigned for verification |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹³³ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|------------|--|-----------------------------|-----------------------------|---|---|-----------|------------------------------------|------------------------------------|---|
| | | Mid term | End of the project | | | | | | |
| | | | | Reducing soil erosion, minimize landslides, land degradation neutrality, maintaining land productivity. This is tested on a sample considering the hectare patch as the base. | | | | | |
| | Indicator 11 Number of new instances each year of major coral damage along a 1km reef transect in Trial Landscape 3 | Decrease on baseline by 10% | Decrease on baseline by 30% | This is to be defined at the inception workshop | Standard fixed transect survey Measurement cross check of data between past report incidence vs current. | Annually | National Project Coordinator, UNDP | | Risks: The standard fixed transect is left untouched simply to achieve a good score on the indicator Assumptions: The assessment will be done by an independent diving team without broadcasting the links to the indicator |
| | Indicator 12 Percentage of interviewees disaggregated by gender in Focal Villages who say that livelihoods have been enhanced as a | 20% (men) 20% (women) | 50% (men) 50% (women) | This link to indicator 1. Indicator 11 will focus to three project landscape while indicator 1 covers broader impacts generated for the betterment of Gender and Social Inclusiveness even beyond the three trial | Interviews with sound sampling protocols Focus group discussions and surveys to be conducted among the CBOs and divisional stakeholders who are work in the three trial landscapes | | National Project Coordinator, UNDP | Survey documents from KIs and FGDs | Risks: Sampling problems make comparisons invalid Assumptions: Well-designed polling. Honest answers from interviewees |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹³³ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|------------|--|--|--|--|--|-----------|------------------------------------|---|--|
| | | Mid term | End of the project | | | | | | |
| | result of mainstreaming biodiversity into land-use plans | | | landscapes which also includes that beneficiaries are at profit from implementing biodiversity friendly livelihoods. | | | | | |
| | Indicator 13 Percentage of key government and community organizations that publicly endorse and commit to each of the six village-cluster land-use plans | Plan 1: 30% Plan 2: 30% Plan 3: 30% Plan 4: 30% Plan 5: 30% Plan 6: 30% | Plan 1: 60% Plan 2: 60% Plan 3: 60% Plan 4: 60% Plan 5: 60% Plan 6: 60% | six village cluster plan - public and civil societies who supports the endorsement of cluster village plans (GS, Samurdhi, EDO, CBOs, Forest Dept, etc). | Perception surveys | Annually | National Project Coordinator, UNDP | Minutes of meetings, publications and official documents issued | Risks: Sampling problems invalidate the results Assumptions: (i) Expertly designed protocols (ii) Good collaboration from respondents and honest replies |
| | Indicator 14 Policy, community readiness for sustainable tourism in the Focal Village Clusters measured by Scorecard Annex Y | Increase of 15% on baseline score out of 205 | Increase of 35% on baseline score out of 205 | Following key criteria to be measured RECOGNIZED STEWARDSHIP RIGHTS-right to use / own and access certain environmental asset / service OPPORTUNITY FOR POLICY REFORM NATURAL RESOURCE MANAGEMENT | Tourism Destination List, Scorecard assessed for each tourism destination site | Annually | National Project Coordinator, UNDP | Scorecard completed by independent consultant | Risks: Unexpected difficulties in the application of the scorecard Assumptions: (i) Good cooperation from interlocutors in answering questions and providing information. (ii) Adequate time assigned for verification |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹³³ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|--|--|--|---|---|---|-----------|------------------------------------|---|--|
| | | Mid term | End of the project | | | | | | |
| Outcome 4 Monitoring and evaluation, and dissemination of knowledge of project methods and results to contribute to wider application of landscape approach to mainstreaming of biodiversity | Indicator 15 Number of (a) villages and (b) DSDs in which independent monitoring of project impacts is taking place according to sound protocols | To be determined by Inception based on numbers of villages in Focal Village Clusters | To be determined by Inception, based on numbers of villages in Focal Village Clusters | Number of villages and DSDs in which independent monitoring of project impacts is taking place according to sound protocols | KII and demonstrations from those doing monitoring | Annually | National Project Coordinator, UNDP | To be determined by Inception | Risk: Monitoring systems not considered at structural level. Assumption: having proper guidance and follow-up in place which leads to assurance of monitoring systems are adhered. |
| | Indicator 16 Number of substantial knowledge products that reflect best practices and lessons learned including project results and sustainability strategy. | 22 | 42 | Availability of lessons learnt and best practices, which is captured through a dedicated knowledge portal for biodiversity conservation that enable open access to knowledge products initiated with the support of the project. Total # of lessons drawn from knowledge products. | Measures of website traffic, search results on project name, social media reach and engagement. Lists of grey and published literature | Annually | National Project Coordinator, UNDP | Link page of the web of the Government Ministry mandated for the environmental conservation | Risk: Ambiguous internet metrics Assumption: Use of state of the art measures |

- i <http://www.treasury.gov.lk/documents/10181/272149/RPF-NAPPP+-+For+disclosure.pdf/aa720af8-413f-4394-9ec7-1693ff487bc3>
- ii <http://www.undp.org/content/undp/en/home/librarypage/operations1/undp-social-and-environmental-standards.html>
- iii <http://www.thegef.org/sites/default/files/documents/Policy%20on%20Environmental%20and%20Social%20Safeguards%20DRAFT%20for%20Consultation%2C%202018-08-31.pdf>

ANNEX R: BIOPHYSICAL AND SOCIO-ECONOMIC PROFILES OF THE PROJECT LANDSCAPE AND SEASCAPE

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THE PROJECT LANDSCAPE AND SEASCAPE AND THE THREE TRIAL LANDSCAPES

Following the said methodology, the “Managing Together” project area was defined broadly as “the landscape of Malwathu Oya (also known as the Aruvi Aru at its lower reaches) river basin and adjoining Modaragam Aru, Kal Aru and Nay Aru basins, together with the adjacent seascape including a three-kilometre-wide coastal belt and the shallow seas until the 10m depth contour, southwards from the south coast of the Mannar island towards Vankalai, Silvatura and Kondachchi. The project landscape was extended beyond the Malwathu Oya river basin boundary to accommodate contiguous forest stretches that do so, also ensuring the ecological flow from the ridge to the reef along the entire landscape encompassing multiple river basins.

After deliberation among the project design team and Technical Advisory Committee (TAC), three Trial Landscapes were agreed on. These three Trial Landscapes are:

- Trial Landscape 1: Maminiya Oya, Upper Kanadara Oya, Upper Weli Oya and Lower Weli Oya sub watersheds of the Malwathu Oya.
- Trial Landscape 2: Malwathu Oya riverine forests including the Mavillu Conservation Forest and other forests connecting the Madhu Road and Wilpattu National Parks also extending to the Giant’s tank and its downstream feeder tank system.
- Trial Landscape 3: The Malwathu Oya Estuary, and the adjacent sea scape (including coral reefs of Vankalai, Arippu, and Silavaturai, Pearl Banks of Mannar, and Cheval Bank and the sea grass beds in the shallow coastal seas of the area.

The broader project landscape cuts across two provinces of Sri Lanka viz. North Central Province and the Northern Province, represented primarily by two districts, Anuradhapura and Mannar in respective provinces, while the southern section of Vavuniya District also falls within the project boundary. A map of the project landscape and three Trial Landscapes with the administrative boundaries is given in Figure 1. The figure 2 illustrates the four different river basins that were combined to delimit the project landscape.

CLIMATIC GEO-PHYSICAL AND BIOLOGICAL DESCRIPTIONS OF THE PROJECT LANDSCAPE

Biophysical conditions of the Project landscape considerably differ from east to west as it transforms from the dry zone to the (north-western) arid zone. The representation of bioclimatic zones of Sri Lanka (Wijesinghe, et al., 1993) within the project landscape is shown in the Figure 3. Further, the Trial Landscapes belong to the Dry Zone Floristic Region (Ashton & Gunatilleke, 1987) as well as the Dry and Indian Avifaunal Zone (Kotagama, 1989, 1993).

Malwathu Oya basin is the second largest river basin in the island, although the water yield of the basin is not very large due to its location in the dry zone monsoonal area. The river rises from the Ritigala hills, which is a Strict Nature Reserve under the Department of Wildlife Conservation, and it is 164km long and covers 3,284 km² of its watershed. It drains Dambulla and Anuradhapura, passes Medawachchiya and fall into the Gulf of Mannar from Arippu. It is said to have 1450 working tanks in this basin including the minor irrigation schemes even by 1970, while Nachchaduwa, Tissa Wewa, Nuwara Wewa, Maha Kanadarawa, Iratperiyakulam, Pavat Kulam and Giant’s Tanks were the major irrigation schemes by then (Arumugam, 1969). Nevertheless, major tanks in operation today includes Abhaya wewa

(Basawakkulama) in Anuradhapura and the Akathimurippu tanks on the right bank in the lower reaches in addition to the above while the total number of tanks is listed as above 1700. Malwathu Oya basin is about 3246 km² in extent, while the approximate existing storage is about 600 mcm (Meegastenna, J., Irrigation Dept., *Pers. Comm.*).

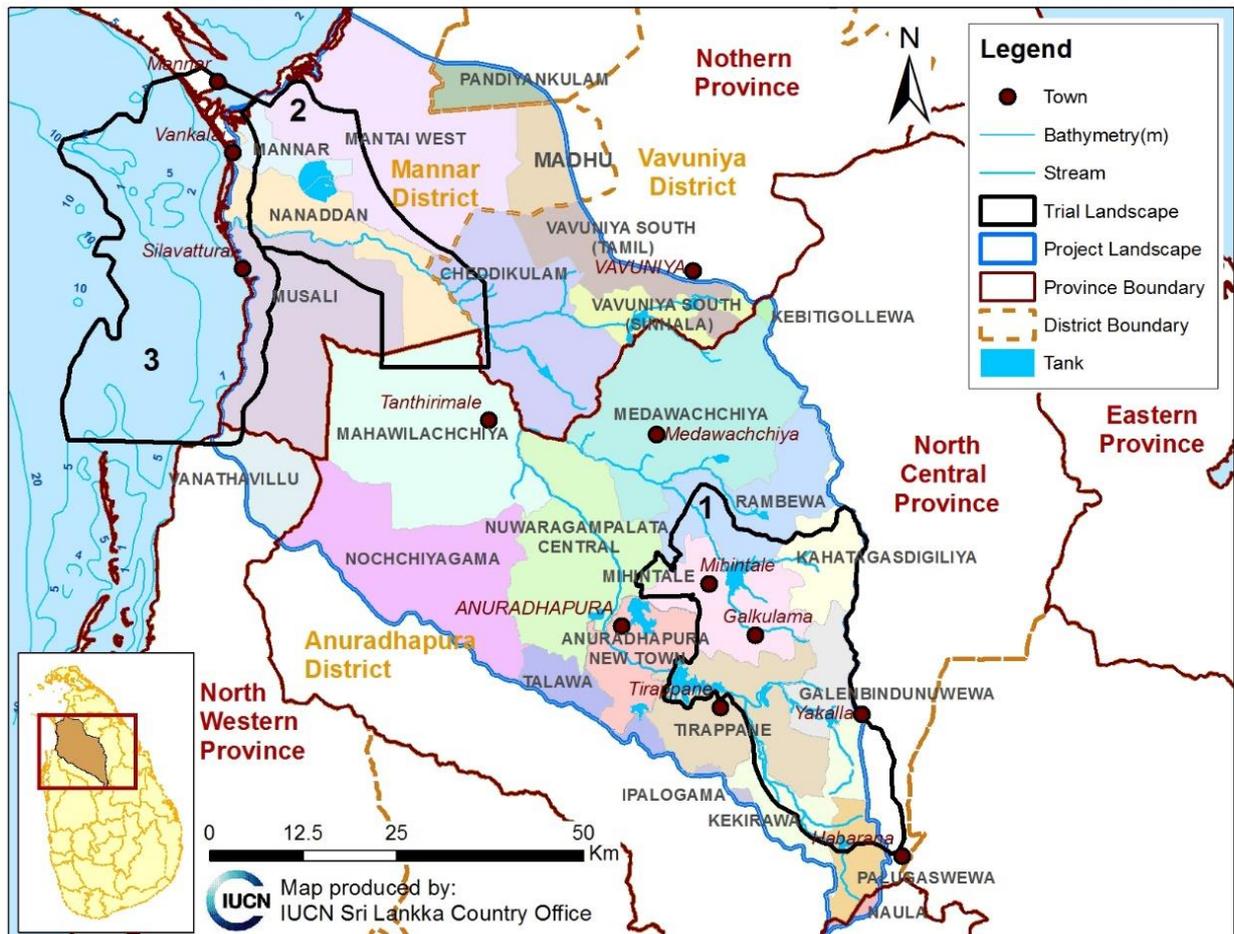


Figure 1. A map of the project landscape and three Trial Landscapes with the administrative boundaries of provinces, districts and divisional secretariat divisions

This basin receives precipitation mainly from the North-east monsoon (between December – February) and the average annual precipitation is about 1200mm. Although the flood problem in this scheme is reported as not severe by 1960s0 (Arumugam, 1969), the floods during 2011, 2012 and 2014 were severe (Meegastenna, J., Irrigation Dept., *Pers. Comm.*), especially in the Anuradhapura city.

As the climatic and geophysical conditions of the project landscape differ considerably those parameters (climate, geology and soils) are discussed separately for the three Trial Landscapes. They contain two Trial Landscapes (1 & 2) within the overarching (Project) landscape. Trial Landscape 3 includes a large seascape.

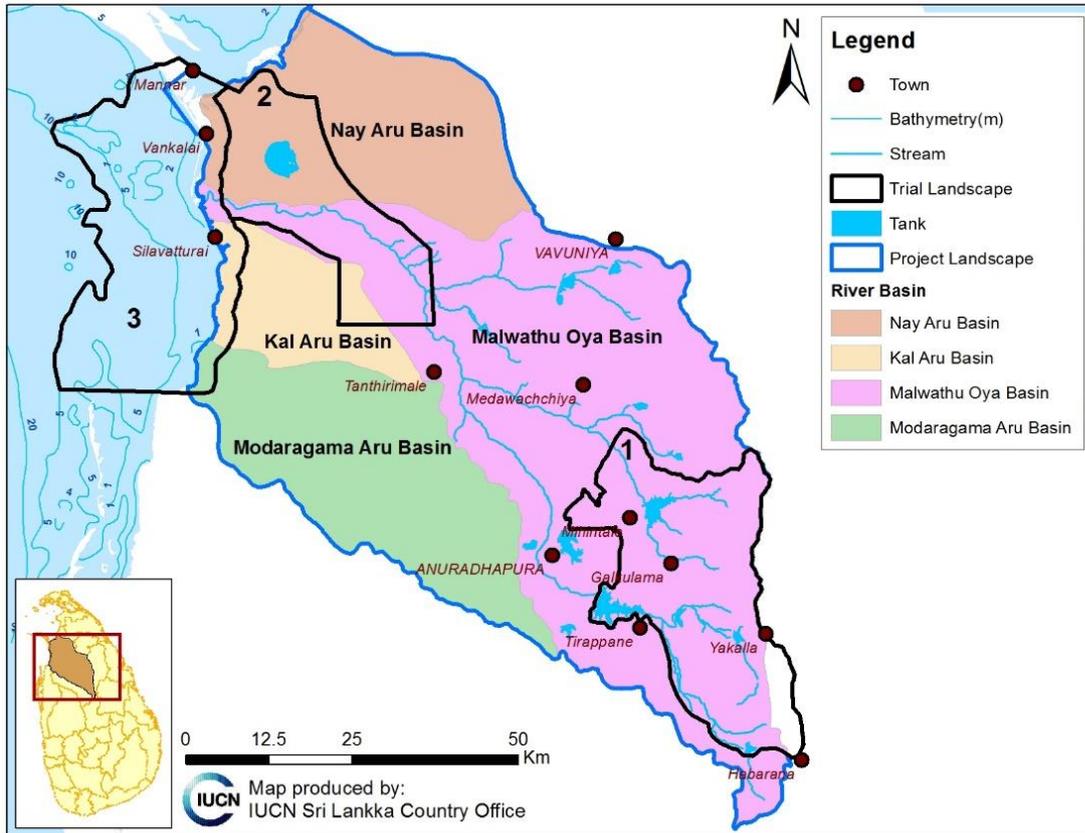


Figure 2. Delimitation of the project landscape comprising of the four adjoining river basins

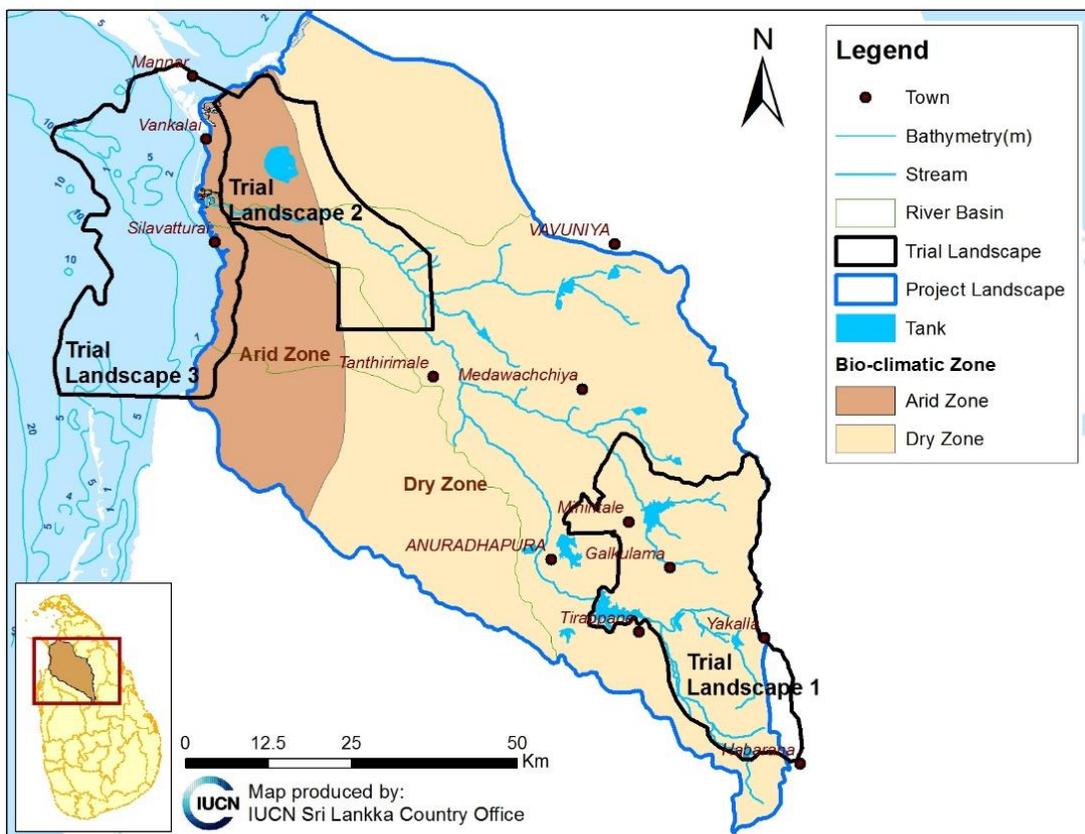


Figure 3. A map of the project landscape and three Trial Landscapes with the bioclimatic zones of Sri Lanka

CLIMATIC AND GEO-PHYSICAL CONDITIONS OF THE THREE TRIAL LANDSCAPES

Trial Landscape 1:

Maminiya Oya, Upper Kanadara Oya, Upper Weli Oya and Lower Weli Oya sub watersheds of the Malwathu Oya.

Climatic and geophysical parameters of this Trial Landscape is given here according to the data available for two of the major tanks within this landscape as provided in the wetland directory of Sri Lanka (IUCN-SL & CEA, 2006) i.e. Nachchaduwa wewa and Nuwara wewa. Both these tanks as well as the Trial Landscape 1 as a whole are fed by the Malwatu Oya and are situated within the dry zone, receiving an annual rainfall of 1,219 mm, primarily via the north-east monsoon. The mean monthly temperature is 27.9°C and the mean monthly relative humidity fluctuates from 60% in March to 90% during December/January (MASL, 2015, IUCN and CEA, 2006). Strong, dry winds frequently blow across the plains, making the area very dry during the south-west monsoon. The soil composition of the area consists of reddish-brown earths and low humic gley soils characteristic of the northern lowland region with some alluvial soils found in the river valleys (IUCN and CEA, 2006).

Trial Landscape 2:

Malwathu Oya riverine forests including the Mavillu Conservation Forest and other forests connecting the Madhu Road and Wilpattu National Parks also extending to the Giant's tank and its downstream feeder tank system.

Trial Landscape 2 of the "Managing Together" project intersects the Dry and Arid bioclimatic zones of the country from east to west. Similarly, it is mainly located in the Mannar District of the Northern Province, while the eastern section falls into the Vavuniya District of the same Province (Cheddikulam DSD). Geophysical and climatic features in the eastern section of Trial Landscape 2 (Cheddikulam) hence is transitional between those of Trial Landscape 1 (discussed above) and the Giant's Tank (eastern section of Trial Landscape 2).

The Giant's tank and the village tank system fed by it makes the eastern section of the Trial Landscape 2. The Giant's tank itself covers 2,500 ha at an altitude of 40 m above mean sea level. Being an ancient tank in the arid zone, it irrigates approximately 11,000 ha of paddy land and excess water is stored upstream by the Tekkam Anicut in order to irrigate a further 2,500 ha at the end of the monsoon season. The arid bioclimatic zone (also treated as the semi-arid zone in climatic classifications) is characterized by high temperatures and low rainfall as monthly temperatures range between 26.5°C and 30.0°C normally reaching its peak between May and August. The area receives nearly 60% of its rainfall during the north-east monsoon from October through to December. The land area is relatively flat and sits at low elevations while the tank feeds up to 164 minor tanks further downstream (IUCN and CEA, 2006).

Trial Landscape 3 including the adjacent seascape:

The Malwatu Oya Estuary, and the adjacent sea scape (including coral reefs of Vankalai, Arippu, and Silavaturai, Pearl Banks of Mannar, and Cheval Bank and the sea grass beds in the shallow coastal seas of the area.

The coastal climatic and geophysical features are represented in this report by the data in the Wetland Directory of Sri Lanka for the Vankalai triangle, while the marine geophysical features are from the data for the Gulf of Mannar.

Approximately 1,000 ha at sea level, the Vankalai triangle is a mosaic of wetlands mostly devoid of human settlement consisting of a cluster of coastal and marine wetlands, including shallow lagoons, sea-grass beds, seasonal waterholes and tanks, mangrove and salt marshes. The area is a part of the north-western semi-arid zone, receiving a mean annual rainfall of 950 mm, chiefly during the north-east monsoon period between October and February. The majority of the rainfall usually occurs during October through to December while the average annual temperature is 27°C. These wetlands play a crucial role flood retention, nutrient cycling and are connected to the coastal and marine ecosystem of the Gulf of Mannar.

The Gulf of Mannar has some of the most extensive reef formations and marine seagrass beds in Sri Lanka. Several reef formations to the north of Kandakuliya towards Mannar, including the Bar Reef and reefs off Silavaturai, Arippu and Vankalai form a vast marine ecosystem complex. The tides in the Gulf of Mannar and the tides in Palk Bay differ as there is almost a twelve-hour difference in the tides despite their close proximity. This results in a water depth differential on either side of Adam's Bridge, driving strong currents through the gaps between the islands. These currents change direction with the tide, meaning that small vessels can be carried through the channel in either direction simply by the tidal flow (IUCN, 2018). Reefs in the Gulf of Mannar are very similar to the Bar Reef, consisting of shallow continental shelf reefs and deep sandstone reefs. Most coral patches are located within depths of 1-10 m, while sandstone reefs are found below 20 m. The coral reefs in Silavaturai, Arippu and Vankalai resemble those of the Bar Reef (IUCN and CEA, 2006).

SOCIO-CULTURAL PROFILE OF THE PROJECT LANDSCAPE AND THE THREE TRIAL LANDSCAPES

History of Malwathu oya basin

The Malwathu Oya is 164 km in length and the second longest river in the country. In the ancient times, this river was also referred as the Kadamba Nadie, which originates from the southern part of Ritigala Mountains flowing northwards and then takes a turn to northwestern and meets the Indian Ocean at the Mannar bay.

The Malwathu Oya coast is the part of Sri Lanka which is closest to southern India. Due to the close proximity to the Indian mainland, this maritime region off the Malwathu Oya estuary and the coastline was not only important for shipping and trade, but also as an area vulnerable to sea-borne attacks from dominant south Indian powers. When it comes to the trade, this seascape also supported the renowned and rich pearl banks known from ancient times while the forests immediately surrounding the coast hosted many elephants which were also an important export in ancient times.

The history of the region can be traced via the recorded ancient chronicles and the oral traditions which point to the original arrival of the North Indian Aryans who founded the first civilized settlements in the island. In the legend of prince Vijaya it is related that he and his men sailed down the North-Western coast of India from Supparaka (now Sopara, North of Mumbai) and landed in Lanka at Tambapanni (presumably Arippu today). The name Tambapanni stems from the copper coloured stain left on the hands of those who touched the shore. This name they used to refer to their landing-site and the nearby township was later adopted to refer to the entire island. The river referred

to near the landing place in chronicles is undoubtedly the Kadamba-nadi (present Malwathu oya or Aruvi Aru) and also called as Kalamba and Kolorn Oya (Geiger, 1960; Nicholas, 1963).

It is said that king Vijaya lived 38 years at Tambapanni. After his death, the capital was moved from Tambapanni to Upatissagama and subsequently to Anuradhapura (for an extended period of time). It is worthy to note that this inland directed movement from Tambapanni to Anuradhapura followed the valley of the Malwathu Oya (Nicholas, 1963).

It is believed that the city of Anuradhapura was first founded as a village settlement in the second half of the 6th century B.C. by a Minister named Anuradha during the rule of King Vijaya. King Panddukabhaya is said to have made it his capital in the 4th century B.C. and its design of the city centre and the suburbs was laid out in a planned manner. He formalized his sanctification with the waters from a nearby natural pond which was thereafter deepened and named Jayavapi. He also constructed Abhaya vapi or Baya vava (present Basavak-kulam) and Gamani vapi or Gamanithisa vapi (present Perumiyankulam). The king's palace was situated within a walled Citadel or Inner City. Outside the south gate of the Citadel was the Nandana Park, and further southward, the Mahamegha Park, where the Abayagiri and Mahawihara ruin complex is situated. It should be noted that the ancient city area is at present a World Heritage Site (Geiger, 1960 and Nicholas, 1963).

The original kingdom of Anuradhapura extended over the entire northern and north-central plain and, in medieval times, it was described as Rajarata. The original kingdom was divided into four main divisions, named after the four cardinal directions, and this nomenclature persisted long after the whole of Sri Lanka was united as one kingdom in 161 B.C. (Nicholas, 1963).

Chethiyapabbata vihara in ancient literature and inscriptions is the modern Mihintale vihara which is situated in the upper catchment of the Malwathu Oya basin (Trial Landscape 1). According to the tradition, the Arhat Mahinda thera's meeting with King Devanampiya tissa (3B.C.) occurred here followed by the, conversion of the King and establishment of Buddhism as the religion of the Sinhalese people. Arittagiri, (which at present is Ritigala) is the highest mountain range in the North central province, and has a number of ruins belonging to the Anuradapura period. It is said that in 4th Century BC King Surathissa built Mangula vihara at the base of this Mountain. It is also important to note that the Malwathu Oya begins from the northern and western slope of this mountain (Geiger, 1960 and Nicholas, 1963).

Most of the agricultural lands in the region were sustained by the water supplied by the Malwathu Oya River and the major irrigation projects associated with this river throughout the history. King Moggallana II (531-551), built a dam across the river and created three tanks (Wewa), and the two of them (Nachchadoova and Padavi) still exists and operates, fulfilling the needs of local communities (Brohier, 1935, and Nicholas, 1963).

Furthermore, king Dhatusena created a canal (17 miles) from Malwathu Oya River and built another tank which is historically referred as Manamatu Wewa. Historians have identified that tank as the Yodha Wewa (Giant's Tank) in Mannar district, providing water for agriculture in the semi-arid zone of the country. Yodha Wewa provided water for more than thousands of acres converting the area suitable for paddy cultivation from the era of kings to the colonial period. The Colonial rulers tried to develop and maintain the irrigation network in the area in order to continue the paddy cultivation at high capacities. According to Dutch records in 1679, the Yodha Wewa command area produced sufficient paddy which helped the Dutch government to save money they would have spent for importing rice from other countries (Brohier, 1935). Every colonial governor appointed after 1850's, focused on

improving local agricultural practices and paddy cultivation in the country; as a result, Yodha Wewa was renovated by Sir Joseph West Ridgeway (1896-1903). According to the chronicles, it is also worth mentioning that king Udaya II built another tank known as Akattimurippu Wewa (Liyanagamage and Goonawardene, 1961) in Mannar which was connected to the Malwathu Oya by a 26 miles long canal (Brohier, 1935, and Nicholas, 1963).

King Sena, who ruled in the 9th century also contributed towards developing the irrigation systems in the Malwathu Oya basin. He created a dam across the river at Maradankdawala and built a canal extending 12 miles to provide water to Kanwavapiya tank (Mahakanadara Wewa). This particular canal was extended further by following rulers connecting it to Eru Wewa (Brohier, 1935, and Nicholas, 1963).

Socio-economic background of the Trial Landscapes

The following section briefly describes the socio-economic background of the trial landscapes, based on preliminary rapid surveys conducted in the area during the project preparatory phase. The discussion includes the general statistics on the population and livelihoods, especially the agriculture and fisheries. Further, this section elaborates on the general living condition in the three Trial Landscapes with case descriptions and summary statistics.

Population and Livelihoods

Table 1 provides the data available on the population in in each Province, District, Division, and Village surveyed for socio-economic information in relation to the Managing Together Project Landscape.

Table 1- Population by Project Area

| Province: | District | DSD | | | | Village | | | | |
|-----------------|--------------|---------------------|--------------|--------|--------------|-----------------|--------------|--------|-------|-----|
| North Central | Anuradhapura | Name | Total | Female | Male | Name | Total | Female | Male | |
| | | Mihintale | | | | | | | | |
| 1,266,663 | 856,232 | | 36,754 | 18,885 | 17,869 | Maradankalla | 269 | 141 | 128 | |
| | | | | | | Katupotha | 388 | 199 | 189 | |
| | | | | | | Kirindegama | 130 | 70 | 60 | |
| | | Thirappane | 31,791 | 16,503 | 15,288 | Wannankulama | 313 | 166 | 147 | |
| | | Kekirawa | 67,417 | 34,418 | 33,008 | Kaluebe | 147 | 74 | 73 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | Mahadivulwewa | 509 | 311 | 281 | |
| | | | | | | Keeriyagaswewa | 308 | 148 | 160 | |
| Northern | Vavuniya | Vengala Cheddikulam | 28,576 | 14,538 | 14,038 | Ganeshapuram | 787 | 446 | 341 | |
| 1,221,992 | 181,051 | | | | | Kannati | 378 | 191 | 187 | |
| | | | | | | Bheediyafarm | 4,618 | 2,361 | 2,257 | |
| | | | | | | Paranayalakulam | | | | |
| | | Mannar | Nanaddan | 21,344 | 10,807 | 10,537 | Chemmanthivu | 822 | 402 | 420 |
| | | 162,262 | | | | Kollarsirikulam | 68 | 142 | 74 | |
| | | | | | | Thomaspuri | 676 | 339 | 337 | |
| | | | Manthai West | 6,321 | 13,425 | 2,896 | Kuruvilvan | 36 | 11 | 25 |
| | | | | | | Aalankulam | 160 | 352 | 192 | |
| | Musali | 9,421 | 14,618 | 4,803 | Chilawathrai | 2,403 | | | | |

| | | | | | | | | | |
|--|--|--|--|--|--|---------------|-------|--|--|
| | | | | | | Arippu | 1,948 | | |
| | | | | | | Saveriyapuram | 1,023 | | |
| | | | | | | Kondachchi | 2,420 | | |

Source: Resource Profiles of Divisional Secretariats of Mihintale, Thirappane, Kekirawa, Vengala Cheddikulam, Nanaddan, Manthai West and Musali, Census of Population and Housing - 2012 North Central, 2014 - Northern Provincial Council

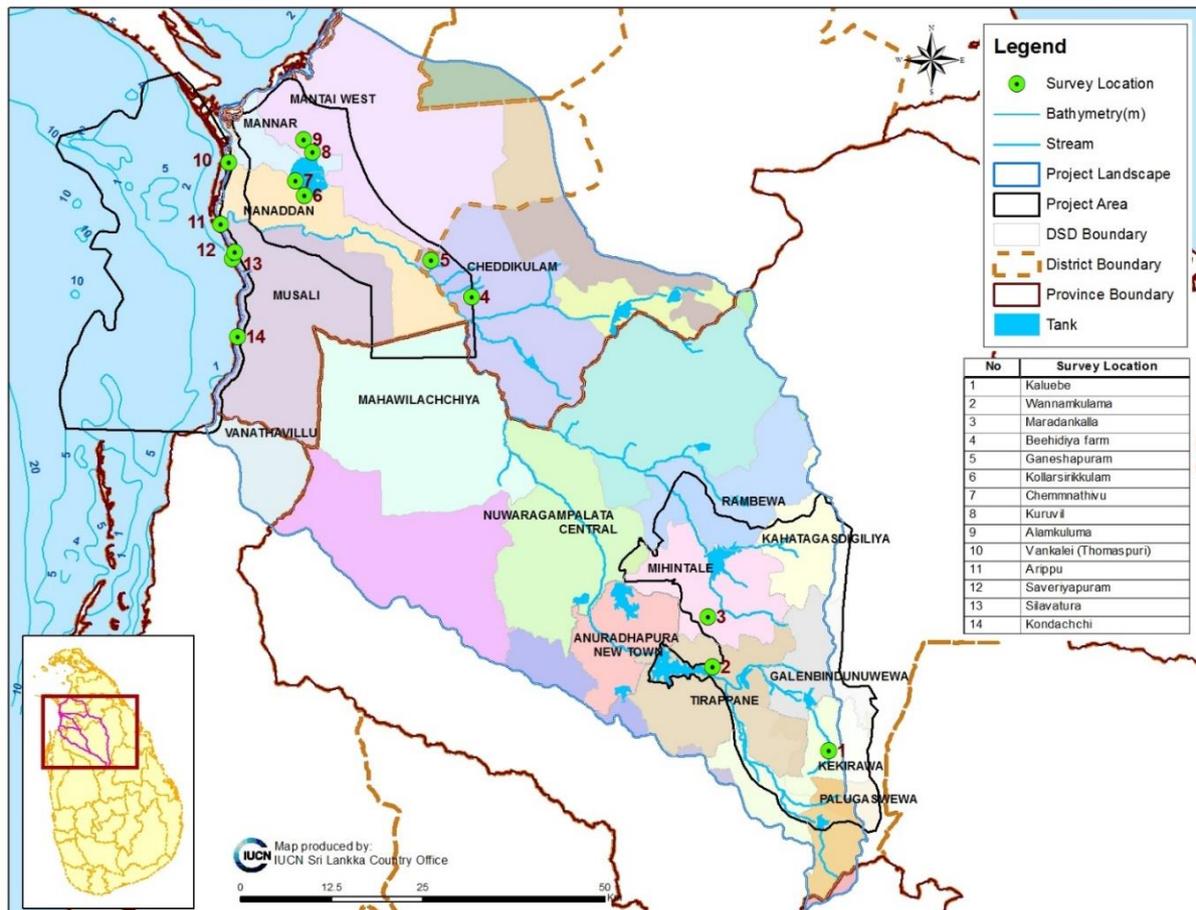
- Age breakdown was not possible due to lack of uniformity in frequency grouping between DSDs

The project covers one District and three Divisional Secretariats of the North Central Province and two Districts from Northern Province consisting of five Divisional Secretariats. The above population data has been extracted from the District and Divisional level population figures.

Out of the total of 23 Divisional Secretariats of Anuradhapura, the Trial Landscape 1 largely reaches three Divisional Secretariats, namely, Mihintale, Thirappane and Kekirawa. Within the Divisional level, the information is captured of the villages that may possibly have a direct impact of the project.

Similarly, Trial Landscape 2, consists of one Divisional Secretariat of the Vavuniya District (Vengala Cheddikulam) and two Divisional Secretariats of the Mannar District (Manthai West while Trial Landscape 3 of the project consists two Divisional Secretariats (Nanaddan and Musali) of the Mannar District.

Figure 4. Socio-economic survey locations (numbered from 1 to 14) within each Trial Landscape, corresponding to possible sites for project activities. DSDs relevant to the project are labelled in black capital letters.



In terms of Ethnic Composition, in Trial Landscape 1, the majority in the sample sites are Sinhalese, while Trial Landscape 2 consists of a majority of Tamils and Muslims. Similarly, Trial Landscape 3 also consist majority of Tamils and Muslims.

Table 2 - Ethnic & Religious composition by DSD

| Province: | District | DSD | Ethnicity | | | | Religion | | | | |
|---------------|----------|---------------------|-----------|--------|--------|-------|----------|--------|-----------|--------|-------|
| | | | Sinhala | Tamil | Muslim | Other | Buddhist | Hindu | Christian | Islam | Other |
| North Central | A'pura | Mihintale | 34,737 | 30 | 1,839 | 149 | 34,554 | 30 | 331 | 1,820 | 9 |
| | | Katupotha | 388 | 0 | 0 | 0 | 388 | 0 | 0 | 0 | 0 |
| | | Kirindegama | 130 | 0 | 0 | 0 | 130 | 0 | 0 | 0 | 0 |
| | | Thirappane | 30,713 | 49 | 1,045 | 0 | 28,837 | 49 | 812 | 2,093 | 0 |
| | | Kekirawa | 51,725 | 1,656 | 13,986 | 22 | 51,442 | 1,474 | 498 | 13,998 | 5 |
| | | Mahadivulwewa | 592 | 0 | 0 | 0 | 591 | 0 | 1 | 0 | 0 |
| | | Keeriyagaswewa | 308 | 0 | 0 | 0 | 308 | 0 | 0 | 0 | 0 |
| Northern | Vauniya | Vengala Cheddikulam | 25 | 19,671 | 8,880 | 0 | 25 | 15,873 | 3,798 | 8,880 | 0 |
| | | Mannar | 224 | 18,357 | 2,879 | 0 | 202 | 4,086 | 14,293 | 2,879 | 0 |
| | | Manthai West | 4 | 16,735 | 9,703 | 0 | 4 | 8,302 | 8,433 | 9,703 | |
| | | Musali | 215 | 4,784 | 24,491 | 0 | 145 | 335 | n/a | 244911 | n/a |

Source: Resource Profiles of Divisional Secretariats of Mihintale, Thirappane, Kekirawa, Vengala Cheddikulam, Nanaddan, Manthai West and Musali

Agriculture and fisheries

The following table provides a breakdown by type of farming (crops or combination of crops according to season) – within the survey area. Chena farming is also included even if performed in illegal encroachments.

Table 3 - Livelihood – (available official data for 2015 – 2017)

| DSD | Village | Agriculture –Metric Tons | | | | | | Fisheries | | |
|-----------|--------------|--------------------------|------|--------|------------|--------|-------------------------|----------------|-------------|----------|
| | | Paddy | Corn | Pulses | Vegetables | Fruits | Nuts/ Sesame/ Groundnut | Marine fishing | Fresh-water | Dry-fish |
| | | Chena cultivation | | | | | | | | |
| Mihintale | | | | | | | | | | |
| | Maradankalla | 16 | | 0.5 | 0 | 12.9 | 6 | 0 | 0 | 0 |
| | Katupotha | | | | | | | | | |
| | Kirindegama | | | | | | | | | |

| | | | | | | | | | | | |
|-----------------------|----------------|--------|---------------------------|----------|--------|-----------|-------|-------------|---------------|-----|--|
| Thirappane | Wannankulama | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kekirawa | Kaluebe | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Keeriyagaswewa | 80 | 0 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | |
| | Mahadivulwewa | 141 | 00 | 0 | 5.3 | 0 | 0 | 0 | 0 | 0 | |
| | | | Homestead and leased land | | | | | | | | |
| **Vengala Cheddikulam | - | | 280.2 | 2,495.71 | 146.25 | See below | 645.7 | 0 | 30,700.1 Tons | | |
| **Nanaddan | | 32,370 | | | | | | 2,86.8 tons | 10 tons | | |
| **Manthai West | | 18,559 | 190 | 50 | 797 | 1,513 | 182 | 2,68.2 tons | 6.7 tons | | |
| **Musali | | 20,380 | 63 | 110 | 1,373 | 1,928 | 31 | N/A | 150 tons | N/A | |

Source: Resource Profiles of Divisional Secretariats of Mihintale, Thirappane, Kekirawa, Vengala Cheddikulam, Nanaddan, Manthai West and Musali

** Note that in North Central province, livelihood production data are given by village while in the Northern Province, livelihood production data are given at Divisional Secretariat level: i.e. the figures are for overall performance of the Divisional Secretariat, including but not limited to the village level production figures in the selected Trial Landscapes. Although Musali DSD is heavily involved in marine fishing, data at DSD level is not available.

Table 4 - Income sources and key livelihood Assets

| District | Division | Village | Agricultural Productions |
|--------------|---------------------|-----------------|--|
| Anuradhapura | Mihintale | Maradankalle | Fruits - banana cultivation, cattle (buffalo, milk-cow), goat milking, Chicken coups 27, |
| | | Katupotha | N/A |
| | | Kirindegama | N/A |
| | Thirappane | Wannakulama | N/A |
| | Kekirawa | Kaluebe | Cattle (small nos.), poultry – 3 coups |
| | | Mahadivulwewa | N/A |
| | | Keeriyagaswewa | N/A |
| Vavuniya | Vengala-Cheddikulam | | Chillie, Red Onions and Large onion, pulses (black gram, green gram, cow-pea, ground/sesame, Kurakkan, leafy vegetable, Tubers, Fruits: mangoes, jack, bananas, lime, oranges and papaya, palmyrah based products Fishing: non-mechanized fibre crafts – 126 Poultry: 38935 Birds Cattle: Buffaloes & cattle: 22,926 Goats: 82013, sheep:50, pigs: 45 |
| | | Ganseshpuram | Data deficient |
| | | Kannati | cattle – Local 425 nos (milk, bulls & calves, goats 300 nos., pigs – 10 nos., poultry – 1335 – laying hens, cockerels and chicks |
| | | Paranayalakulan | N/A |
| | | Bheediyaafam | Data deficient |
| | | | Nanaddan: red onion, big onion, chillies, pulses, nuts, corn, fruits: mango, jack, banana, lime, pomegranate, guava, wood-apple – 30480 Metric tons, vegetable: 80037 Metric Tons, Home gardens: 1050 – hectares – 105. Livestock: cattle, 18,701, goat 8,139 sheep - 8, pigs 35, poultry 62581 (includes ducks) Non-mechanized crafts – 41, Out-board motoring fishing crafts: 486, |

| | | | |
|--|--------------|--------------------------|---|
| | | Chemmantheevu | 1973 nos. (poultry), pigs – 35 nos |
| | | Kollarisikulam | N/A |
| | | Thomaspuri (Vankalai) | poultry – 2116 birds, |
| | Manthai West | | Cattle:37,849, goats: 1,423, Poultry: 33,825 Boats: outboat: 128, mechanised – 191, non-mechanised: 93, Fruits: mango, jack, banana, lime and papaya Other vegetables: Chillie, red-onions, big onions – 345 metric tons Home Gardens: 1400 with an extent of hec, 128 |
| | | Kuruvil | N/A |
| | | Aalankulam | N/A |
| | Musali | | Fruits: mango , jack, banana, lime, orange, papaya, pomegranates, guava, wood-apple (Chila:150 Metric tons, Kondachchi – 470 Metric Tons) Cattle: 14043, goats: 9652, Poultry: 40330 (inclusive of ducks), Inland fisheries: 150 metric tons Boat type: out-boat – 540, non-mechanized 117, |

Source: Resource Profiles of Divisional Secretariats of Mihintale, Thirappane, Kekirawa, Vengala Cheddikulam, Nanaddan, Manthai West and Musali.

N/A = Data not available

While the Divisional Secretariats of Anuradhapura provides village level production details, only divisional aggregates of production details are available from Vavuniya and Mannar Districts.

Table Nos 3 and 4 indicate that agricultural production in Vavuniya and Mannar far exceeds the production patterns in the Divisional Secretariats in Anuradhapura. However, due to lack of detailed information by villages, it is not possible to compare.

General Living Conditions of population of the three Trial Landscapes:

Trial Landscape 1 – Based on the data collected from Mihintale, Thirappane and Kekirawa DSDs (Anuradhapura District)

In the three specific Divisional Secretariats of Trial Landscape 1, almost all consist of mono-ethnic groups, but there are caste divisions. The different caste groups though live side by side to each other, live in separate villages.

Table 5 - Agricultural Production

| DSD | Village | Agricultural Production |
|-------------------|--------------|--|
| Mihintale | Maradankalla | <ul style="list-style-type: none"> - There are 97 households. - Around 40 persons are engaged government/regular employment with 15 female members and 25 male members. Some of these male members are employed in the armed forces. - 5 – 6 families are engaged in cattle-keeping. - Maradankalla receives its water for cultivation from the cascade system. About 90 Households are involved in paddy cultivation and a very small number of farmers are engaged in chena cultivation. - The women harvest leafy vegetables, water-lily roots, lotus seeds and other berries from the forest. - This village is threatened by elephants, Agri-produce is destroyed by squirrels (Grizzled giant squirrel) and peacocks |
| Thirappane | Wannakulama | <ul style="list-style-type: none"> - Rain-fed cultivation in the chena. Most households are involved in growing corn (maize) - During Maha season, paddy cultivation is done in 53 acres of paddy land. - Most men are engaged in irregular labour jobs during yala season |
| Kekirawa | Kaluebe | <ul style="list-style-type: none"> - Out of the 80 Households, 20 families keep cattle and the milk is sold to companies that come to the village to purchase - The men take the cows to graze in the forest. - There are 4 deep wells to a depth of 140 – 200 feet - All families are not involved in chena cultivation - Due to water scarcity, corn (maize) production is encouraged by the dept. of agriculture and the production is bought by CIC (private sector) company additionally, some families also grow sesame and cowpea. - Other agriculture related resources that is harvested from the forest are: wood-apple, Mango (kohu), Palmyrah and tamarind |

Source: Rapid Assessment – August 2018

While there are families who have lived through generations in the three selected villages owning ancestral property, the majority have been resettled later. These settlers hold land permits under the Government sponsored 'Jayabhoomi' scheme and lived for a few generations at the same place. In all instances the Land Permits have been issued in the name of the male occupant as he is considered the head of the household.

Wannamkulama is fed by the waters from the Eru tank, Manankattiya tank and Nachchadoova tank irrigation system. Kaluebe depends on rain-fed agriculture and therefore, their cultivation in terms of seasons and quantity of production is less compared to Maradankalla in Mihintale. Overall, Chena cultivation (slash-burn) in state land

(mainly forested areas) has been discouraged by the government. As a result, of number of farmers compared to the available land is high. Therefore, cultivation is carried on in one land over long periods. Due to this, the productivity of the land has gradually diminished. The general land extent per household is between half to three quarter acres. However, most families have encroached in to government land and therefore, the cultivation is extended in to these lands.

Except for Maradankalla, the other two villages find difficult to cultivate paddy in the yala season due to lack of water. Notably, only cattle are farmed in Kaluebe and Wannakkulama while Maradankalla in addition, raises a few goats. However, the livestock farming is for the purpose of milking and not necessarily for meat compared to others project sites in the Northern region.

In all three-villages, women are involved in paddy and Chena cultivation contributing substantially to family livelihood. In the case of women-headed households, the paddy land is leased for tenant farming. Kaluebe and Maradankalla indicated that they are heavily indebted to middle-men who provide them with seeds, fertiliser and pesticides and during the harvesting season, they buy back offering minimum prices.

Non-Timber Forest produce such as wood-apple (*Limonia acidissima*), palu (*Manilkara hexandra*), weera (*Drypetes sepiaria*), dan (*Syzygium cumini*), tamarind and Palmyra (*Borassus flabellifer*) are hardly regarded as cash products nor do they have the skills, knowledge and exposure for value addition. Kaluebe complains of inability to transport their vegetable produce to the market in Dambulla, the centralised market system.

In the three project sites, women and men participate as agriculture labourers during the yala season. The men are always paid more than women. Men's daily-wage is about 1,300 LKR and lunch while women are paid 1,000 LKR and no lunch is provided. Youth in general do not seem to be motivated to take to agriculture and some of the reasons could be that high indebtedness and poor yielding patterns. With very few employing agencies, only a few young males and females are engaged in the private sector industries. Most often, the male students tend to drop-out of school after the General Certificate of Education Ordinary Level and seek labour jobs that are cyclical or sometimes in sand mining from rivers. Asymmetrical employment patterns of youth in a fast ageing population will have serious impact on the country's economy.

In Wannakkulama, 35 out of 115 households, are Samurdhi beneficiaries. There are 4 males suffering from Chronic Kidney Disease of Unknown Etiology (CKDu) receiving government support.

The district has been severely affected by drought in the past three-years threatening food security. Some women complained that their families are not able to have three meals a day.

Trial Landscape 2 – Based on the data collected from Vengala Cheddikulam, Andypuliankulam, Nanaddan, Manthai West DSDs (Vavuniya and Mannar Districts)

Trial Landscape 2 of the project site includes two districts of the Northern Province namely Vavuniya and Mannar. From the Vavuniya district, Vengala Cheddikulam DS Division and from the Mannar district, Manthai West, Nanaddan DS Divisions.

Table 6 - DSDs and Villages from Vavuniya and Mannar Districts selected for Trial Landscape 2

| District | DSD | Village |
|-------------------|-------------------------|-------------------|
| Vavuniya District | Vengala Cheddikulam DSD | Ganeshapuram |
| | | Kannati |
| | | Bheediya farm |
| | | Paranayalakulam |
| Mannar District | Manthai West DSD | Kuruvil |
| | | Aalankulam |
| | Nanaddan DSD | Chemmantheevu |
| | | Kollar Siri Kulam |

The Northern Province has been directly affected by the war and one of the general features of this province is that most people in the Trial Landscape have been affected with multiple displacement. The ongoing drought therefore have an effect on their resilience to re-bounce from poverty. This is further exacerbated due to poor employment opportunities. The villages in Trial Landscape 2 is less resourced especially the GN Divisions coming under the Vavuniya District. Most of the resettled families in these areas have no options of livelihood other than cyclical agriculture labour work and cultivation in small home garden plots. The table below is a proof to the fact by the presence of the larger number of labourers compared to the rest of the livelihoods.

Table 7 - Types of Livelihood

| G.N. Division | Agriculture | Mason | Carpenter | Electrician | Motor Mechanic | Government Employee | Private Sector | Small Bussiness | Labourer | Others |
|--|-------------|-------|-----------|-------------|----------------|---------------------|----------------|-----------------|----------|--------|
| Andiyapuliyanakulam (Bheediya farm included) | 592 | 191 | 38 | 12 | 10 | 25 | 13 | 32 | 1190 | 27 |
| Periyakaddu - Ganeshapuram included | 147 | 32 | 8 | 9 | 2 | 12 | 2 | 10 | 149 | 48 |
| Kannaddi | 25 | 9 | 0 | 2 | 0 | 6 | 0 | 6 | 89 | 22 |

Source: Resource Profile – Vegalcheddikulam 2017

Table 8 - Unemployment by level of Education

| G.N. Division | Un –employed | | | | | | Total |
|--|------------------|--------|-----------------------------|--------|-----------------------------|--------|-------|
| | Below G.C.E. O/L | | Educational Level G.C.E.O/L | | Educational Level G.C.E.A/L | | |
| | Male | Female | Male | Female | Male | Female | |
| Andiyapuliyanakulam - Bheediya farm included | 427 | 512 | 342 | 395 | 102 | 103 | 1,881 |
| Periyakaddu - - Ganeshapuram included | 32 | 35 | 28 | 38 | 6 | 6 | 145 |
| Kannaddi | 26 | 26 | 21 | 25 | 4 | 5 | 107 |

The above table 8 indicates rate of unemployment among those who have attended school. While unemployment among females and males remain same for those who have completed GCE ALs, for those below that, overall the female unemployment is greater.

Table 9 - Details of Foreign Employment

| No | G.N. Division | House Wives | Carpenters | Masons | Drivers | Labors | Others |
|----|---|-------------|------------|--------|---------|--------|--------|
| 1 | Andiyapuliyankulam (Bheediya Farm included) | 98 | 5 | 5 | 4 | 15 | 3 |
| 3 | Periyakaddu (Genshapuram included) | 17 | 0 | 0 | 0 | 4 | 2 |
| 4 | Kannaddi | 12 | 0 | 0 | 0 | 3 | 1 |

Source: *VengalaCheddikulam DSD Resource Profile 2017*

Table 9 above is an indication of numbers of people migrated in search of work from the related Grama Niladhari Divisions.

Table 10 - Cattle Farming

| No | G.N. Division | Neat Cattle | | | | Buffaloes | | | |
|----|---|-------------|------------|-------|--------|-----------|------------|------|--------|
| | | Milk Cows | Other Cows | Bulls | Calves | Milk Cows | Other Cows | Bufs | Calves |
| 1 | Andiyapuliyankulam - (Bheediya Farm included) | 1,120 | 220 | 100 | 610 | 30 | 5 | 8 | 10 |
| 3 | Periyakaddu - (Genshapuram included) | 90 | 270 | 40 | 48 | 0 | 0 | 0 | 0 |
| 4 | Kannaddi | 100 | 220 | 30 | 75 | 0 | 0 | 0 | 0 |

Source: *VengalaCheddikulam DSD Resource Profile 2017*

Table 11 - Poultry Rearing

| No | G.N. Division | Turkeys | Ducks | Laying Hen | Cocorels | Chicks | Broilers |
|----|--------------------|---------|-------|------------|----------|--------|----------|
| 1 | Andiyapuliyankulam | | | 900 | 260 | 330 | 900 |
| 3 | Periyakaddu | | | 490 | 130 | 120 | 0 |
| 4 | Kannaddi | | | 785 | 230 | 320 | 0 |

Source: *VengalaCheddikulam DSD Resource Profile 2017*

The project sites in Trial Landscape 2 is seriously affected due to water scarcity despite the fact that Malwathuoya is the closest water source for most project sites in Vengalacheddikulam.

Table 12 - Livelihood by village level

| | Village | | |
|-------------------|--------------|--|--|
| Trial Landscape 2 | Ganeshapuram | <ul style="list-style-type: none"> - 20 in garment factory - Home gardening - Vegetable and Ground nut - Labour work - 8 cattle, 5 goats, most have small poultry coups - 8 migrated for work | <ul style="list-style-type: none"> - 10 in garment factory - 50% irregular labour work - Farming related labour work - Some masonry, carpentry ad wiring |

| | | |
|------------------|---|--|
| Kannaty | - 10 rear cattle, 5 – goats and 10 - poultry | - 5-6 fishermen - |
| Bheddiya Farm | - 2 family health officers (mid-wives) - Labour work | - Cattle rearing – grazing in forest - Labour work |
| Chemmantheevu | - Agriculture and fisheries labour - 10 cattle & goat rearing, poultry, duck - Grow vegetables - 1 regular job (Ammachchi) - 10 in Garment industry - Colombo | - 100 fishing - 75 labour work including sand-mining - 10 Small shops - 25 government employees |
| Kollar sirikulam | - Vegetable cultivation in small plots of land | - Casual workers - Cultivation in leased land - 10 keep cattle on common grazing grounds |
| Kuruvil | - Women engaged in home gardening, cattle rearing - 35 palmyrah leaf productions - Sewing 3 persons - Dry fish (few) | - 90% men o for labour work - Lease farming paddy or groundnut |
| Aalankulam | - Agriculture labour – groundnut planting & harvesting | - Cattle & goat rearing |

Source – Rapid Assessment August 2018

Trial Landscape 3 – Based on the data collected from Nanaddan & Musali DSDs (Mannar District)

Table 13 - DSDs and Villages from Mannar Districts selected for Area 3

| District | Division | Village |
|----------|--------------|----------------------|
| Mannar | Nanaddan DSD | Vankakal (Thomspuri) |
| | Musali DSD | Arippu |
| | | Saveriyapuram |
| | | Silavathurai |
| | | Kodachchi |

Five villages are identified as potential project sites for Trial Landscape 3. Out of the five villages, four are located along the beach while one village borders the Mavillu Conservation Forest away from the sea. Thomaspuri which is part of Vankalai comes under Nanaddan DSD and the rest of the villages under the Musali DSD. These communities have been affected by the war and have faced multiple displacement. While families living by the sea have received plots of 20 perch land, those in the Mavillu forest area have received half acre land. Some of the families in this area also hold ancestral properties up to around 3-4 acres.

Thomaspuri which is part of Vankalai (East Arrippu) consists of 350 households out of which 60 are women headed. The major occupation of the men in the village is fishing and women help in cleaning the nets either as part of family labour or as paid labour. About 30 persons are engaged in regularly paid jobs. 10 households keep cattle.

The key CBO in the area is the fisheries society where the majority are male members. There are however 10-15 women members and two of them own boats as widows of fishermen. The role of the fisheries society initially had been to help them get boats after resettlement (government to re-start livelihood) and legally regularizing fishing by helping to obtain permits.

The deprived women from both Arippu and Thomaspuri collect clamps during off-season in the lagoon.

Water is scarce and drinking water is purchased. The community has only dug-wells. One family mentioned that during the rainy season, they fill the well with water through the roof-gutter. Since they have been doing this for some time, they claim that the water quality in the well has been improved. It is usually women who go to collect firewood during dry season.

Among the community issues, incidences under-age marriages, use of child labour, domestic violence, drug addiction and drinking is habitual in some households. Unemployment is high among the youth. Kondachchi consists of there are 580 households. The small village that existed prior to the war, has been expanded. The government has provided land to new settlers. The provision of land for the resettlement is now been challenged as this settlement is an encroachment in to the forest cover. 90% of these families are farmers. Some families engage in both fishing and farming. Cattle and goat grazing are done by men. There are also men who travel outside the village for work. There are 40 undergraduates and all are males. Seven females have received entrance to enter university in the current year.

75 households of Kondachchi are Samurdhi beneficiaries. There are 15 children below five who are malnourished. In general, it is men who have been granted the right of the land. However, in the case of widows, the land titles are issued in the women's names.

Wood Apple, Palu are non-timber products that the women earn an income. There is also a cashew farm that belongs to the Cashew Corporation. The land extent is not fully known but approximated to be over 2,000 acres, at present under the armed forces. Prior to the war, both Muslim and Tamil women had worked at the farm. The cashew plums however could be used by the community for value addition.

There is one person in the community who has been attacked by a bear. The community also experience their crops being destroyed by elephants. There had been an instance of an elephant be poisoned and killed in this area.

Chilawathurai consists of 580 Households. The Rural Fisheries Organisation currently has a membership of 123. Around 100 persons (men) are involved in Scuba diving for Sea-cucumber, shanks/lobster and 'Girawa' fish using 30 boats averaging three persons per boat. 25 boats engage around 50 persons. Around 80 persons involved in skin diving with 8 per boat (10 boats). A few families are also engaged in making dry fish. According to the president of the Fisheries association, seasonality does not apply to scuba divers as they are able to travel to other parts of the island when the sea is rough in one area.

Around 12 women are involved in sewing, 50 rear cattle, 35 keep goats, around 100 keep poultry. Some women also engage in cleaning fish nets. The daily wage for a man who provides labour in the boat is around 2,000 and a woman cleaning fish-nets is 1,000 LKR. During off season, the amount is reduced to 500 LKR.

Apart for fishing, around 60 families are also involved in farming. Around 40 males have migrated for purpose of employment and around 80 persons are involved in regular employment in the government sector. One hundred eight households are Samurdhi beneficiaries. Thirty eight are women headed households out of which, 4-5 are war-widows. Forty persons are said to be disabled – but are not disaggregated by sex and age. Sixty Households are considered poorest of the poor. There are five children below the age of five, identified to be malnourished.

Dynamiting, Indian trawler boats, monofilament nets and night time diving for fishing are identified as destructive forms of fishing. There have been discussions between the fishermen of South India and Sri Lanka regarding trawler

fishing in Sri Lankan waters but a solution has not been reached. Tensions in these areas do exist between the communities that practice illegal fishing methods such as night-time scuba diving and the local communities. This community does not seem to perceive tourism positively and they complain that the community is squeezed in between the police quarters, navy quarters and army quarters. This affects the privacy of the community where the females in particular feel uncomfortable.

Saveriyapuram is the village adjoining Chilawathurai consisting around 150 Households. Sixty persons are boat-owners. Around 10 persons hold between 1 – 2 acres of land and are engaged in paddy cultivation. Eight persons are shop-keepers, ten masons, and a few do more than one job like carpentry which is an irregular job. A few women engage in mixture making, dry-fish making, cleaning fish-nets, cutting of fish for drying. Some grow vegetable in their home gardens. Women are also engaged in livestock such as cattle keeping, goat rearing. Twelve persons are employed in regularly paid jobs. One person also make yoghurt. Three women work in the Middle East (Qatar). Women complained that the livelihood training provided by the DSD is not practical. The men in Saveriyapuram are mostly involved in fishing, while some make cement blocks and a few others are masons.

Boys tend to drop-out of school from grade nine onwards due to poverty or inability to learn (slow-learning). In this village, there are also 3 families who have not sent their children to school after age six. Over 90% of male youth consume liquor and some use drugs. There are around 10 household that experience domestic violence. Fifteen elderly females live alone. Government provided permits for 20 perch land for resettling and in most instances are issued in the name of the head of the households which happen to be men. Filtered water is purchased by the villagers.

Arippu East and West has 600 households. Around 200 of this number are involved in fishing and another 200 in farming. Around 10 families are engaged in cattle farming. In Arrippu, there are two Farmer Organisations and two Fisheries organisations. Approximately 40% of the women in the community are engaged in cleaning nets. The poor women fish clamps in the lagoon. Indian Trawlers and fishing by fishermen from other areas, dynamiting has reduced the fish harvest.

Around 60 are women headed households. The livelihood where fishing is done by men and women playing a supportive role is similar to that of Thomaspuri. For those who are engaged on labour wage, the daily wage for women is around 1,000 LKR during the fishing season while during the off season where a fewer number of women are engaged, it is reduced to 500 LKR. In Arrippu, there are around 25 undergraduates and most of them are females. Most in this village have completed their GCE (Advanced Level education). Most youth in this village do not follow Vocational Training and even those who have followed are unable to secure jobs. Approximately 30 are engaged in regular employment some of which are government jobs. The women shared that child labour is used in sand-mining. Women say domestic violence exist in most families. Drug addiction is present among the males in many households. Unemployment is high among the youth.

Arippu in particular appear to be insecure due to the presence of other ethnic groups and is been accused of land grabbing by one ethnic community. The community also has a mangrove conservation group consisting of women and youth. Some of the Youth who are part of this group is also associated with the Dugong project.

Data on fisheries related activities in Nanaddan (Nanaddan Divisional Secretariat, 2016)

Table 14 Distribution of fishing Population

| F.I.Division | 2012 | | | 2013 | | | 2014 | | | 2015 | | | 2016 | | | 2017 | | |
|---------------|------------------|--------------------|------------------|------------------|--------------------|------------------|------------------|--------------------|------------------|------------------|--------------------|------------------|------------------|--------------------|------------------|------------------|--------------------|------------------|
| | Fishing Families | Fishing population | Active Fishermen | Fishing Families | Fishing population | Active Fishermen | Fishing Families | Fishing population | Active Fishermen | Fishing Families | Fishing population | Active Fishermen | Fishing Families | Fishing population | Active Fishermen | Fishing Families | Fishing population | Active Fishermen |
| Achchankulam | 65 | 624 | 65 | 81 | 532 | 65 | 85 | 532 | 65 | 88 | 543 | 72 | 88 | 543 | 72 | 38 | 163 | 50 |
| Naruvilikulam | 80 | 865 | 85 | 86 | 562 | 85 | 109 | 460 | 123 | 115 | 468 | 123 | 115 | 468 | 123 | 89 | 365 | 95 |
| Vankalai | 1200 | 2735 | 1650 | 1233 | 5629 | 1650 | 1210 | 5390 | 1352 | 1214 | 5402 | 1354 | 1214 | 5402 | 1354 | 522 | 1972 | 586 |
| Total | 1345 | 4224 | 1800 | 1400 | 6723 | 1800 | 1404 | 6382 | 1540 | 1417 | 6413 | 1549 | 1417 | 6413 | 1549 | 649 | 2500 | 731 |

Table 15 Number of Outboard Motor Fishing Crafts

| F.I.Division | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Achchankulam | 13 | 26 | 33 | 35 | 35 | 33 | 37 | 38 |
| Naruvilikulam | 12 | 12 | 24 | 26 | 26 | 25 | 27 | 34 |
| Vankalai | 230 | 275 | 349 | 375 | 363 | 364 | 379 | 414 |
| Total | 255 | 313 | 406 | 418 | 424 | 422 | 443 | 486 |

Table 16 Number of Non Mechanized Fishing Crafts

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|--------------|------|------|------|------|------|------|------|------|
| Total | 0 | 0 | 0 | 8 | 8 | 40 | 41 | 41 |

Table 17 Fresh Fish Production

| | Fresh fish production (no units) |
|--------------|----------------------------------|
| Total | 2,868,522 |

Table 18 Dry Fish Production

| | Production (Kg) |
|--------------|-----------------|
| Total | 100,397 |

Data on fisheries related activities in Musali (Musali Divisional Secretariat, 2017)

Table 19 Fishing Population 2016

| | Fishing Families | Fishing (unsure what this means) | Active Fishermen |
|--------------|------------------|----------------------------------|------------------|
| Total | 1224 | 4672 | 1297 |

Table 20 Methods of Fishing Crafts

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|-------------------------------------|------|------|------|------|------|------|------|------|------|
| Outboard motor fishing craft | 231 | 226 | 226 | 253 | 467 | 365 | 429 | 350 | 540 |
| Non Mechanized Fishing Craft | 22 | 42 | 114 | 114 | 120 | 65 | 126 | 126 | 117 |

Table 21 Types of crafts used

| | No. of crafts | |
|--------------|---------------|----------------|
| | Mechanized | Non Mechanized |
| Total | 540 | 117 |

There appears to be a discrepancy between the data for the In-land Fishery and the Deep -sea Fishery because both sections seem to be using the same table.

BIO-PHYSICAL PROFILE OF THE PROJECT LANDSCAPE AND THE THREE TRIAL LANDSCAPES

Being enriched by a variety of climatic characters, although not that diverse in terms of the geophysical terrain, the nature and prolonged human activities dating back to 2500 years of hydraulic civilisation the project landscape possess a variety of ecosystems providing habitat niches for a remarkable and globally significant biodiversity.

Although information related to the geophysical, climatic and socio-economic aspects of the project landscape are available to a certain degree in published literature and the Divisional Secretariat Resource Profiles, there is a dearth of information on the biodiversity of the area, especially on the terrestrial realm, which also emphasize the need for a systematic survey to be conducted during the initial stages of the project to fill this data gap. Therefore, in addition to surveying the limited number of published records, the PPG team conducted a rapid terrestrial biodiversity assessment over a period of eight days surveying a representative sample of different habitat available for the biodiversity in three identified Trial Landscapes. Whereas the data on marine biodiversity pertaining to the Trial Landscape 3 were already available to a great extent through several rapid surveys conducted by the IUCN Sri Lanka's marine programme for various projects in and around the Gulf of Mannar, under Mr. Arjan Rajasuriya's leadership. The sections below summarise the rapid biodiversity assessment methodology we employed, followed by the results of the survey explaining the diversity of ecosystems and species found in the project landscape.

Rapid Terrestrial Biodiversity Assessment protocol for each Trial Landscape

Ecosystem and species listing through a rapid literature review

An initial rapid literature survey was conducted to review on the terrestrial (including littoral) and marine ecosystem diversity of the study area and the associated species diversity of both the flora and fauna. The following limited number of literature were made available during the limited period we had for the survey: Levers, (1899), Nicholas, (1963), Arumugam (1969), Hoffman (1978, 1991, 1993), Wijeyamohan et al. (2002), FGOG SL (2003), Sirivardana (2005, 2006, 2009), IUCN-SL and CEA. (2006), IUCN (2011), Lagamuwa (2015), Santiapillai and Wijeyamohan (2015), Wijesundara et al. (2017), CBC (2018), and Darshana (In Press - 2018). Few reconnaissance visits to the three Trial Landscapes confirmed the ecosystem/habitat diversity. Additionally, the biodiversity data available on the Biodiversity Baseline Survey Report of the Ritigala Strict Nature Reserve (DWC, 2008) was intentionally excluded from the literature survey. It was due to the current understanding that this patch of isolated mountain forest shown affinities to the wet zone flora and fauna and hence not representative of the general biodiversity of the larger Malwathu Oya basin, although Ritigala sits within the said basin. Further, the limited time available for the rapid literature review constrained our access to Jayasuriya (2008) and the detailed notes of the Ceylon Bird Club (CBC) notes, especially concerning the Giant's tank annual bird counts. Nevertheless, literature reviewed include summaries of CBC note published in the journal Loris and other biodiversity reports on Giant's Tank making our checklists largely complete to date. Furthermore, data were not retrieved from the range maps provided in field

guides for the general understanding on the species distribution due to their possible inaccuracies at finer scales, so that the species found in the list of species possibly found within the project landscape (that was use in landscape selection exercise) are not essentially included in this checklist. Only the authentic records made by the field team or field verified secondary information in published sources were used in its compilation.

Biodiversity sampling plan

The reconnaissance visits also helped in identifying sites for sampling terrestrial fauna and flora to represent the three Trial Landscapes, representing the ecosystem diversity in each Trial Landscape.

Visual Encounter Survey technique (VES; Crump and Scott, 1994; English et al., 1997), supported by listening to the calls in the case of birds, was employed to record both direct and indirect evidences for presence of species, in order to establish the baseline data. The VES were also include opportunistic searches to list the maximum possible number of species in each selected taxon within the shortest possible time. Animal surveys were also conducted during the night. Dragonflies, butterflies, freshwater fish, amphibians, reptiles, birds and mammals were selected as surrogate taxa to represent the entire biodiversity as they are well documented and taxonomically well sorted. Plant specimens were also identified in the field through observations, while specimens were photographed and collected to aid identification and comparison with National Herbarium floral specimens when necessary. In addition to the VES, reliable evidence from surrounding villagers and fishermen were also recorded through personal communication, verified using field guides and photos.

Standard field guides on each taxon were used in species identification, while and nomenclature and classification follows the latest literature among them as in the IUCN flora and fauna of Sri Lanka database (2018); **Flora** (terrestrial and aquatic) -Dassanayake and Fosberg (1980 -1991); Dassanayake *et al.* (1994-1995); Dassanayake and Clayton (1996 -1999), Ashton et al. (1997), Senaratne (2001); Coppejans (2009), Vlas and Vlas (2008, 2013); **Dragonflies** - Bedjanic, *et al.* (2014), Sumanapala (2017); **Butterflies** - D' Abrera, (1998), van der Poorten *and* van der Poorten (2016); **Freshwater Fish** - Pethiyagoda (1991), Goonatilake (2007); **Amphibians** - Manamendra-arachchi and Pethiyagoda (2006); **Reptiles** - Somaweera (2006); Somaweera and Somaweera (2009); **Birds** - Grimmett *et al.* (2016); and **Mammals** - Phillips (1935), Kotagama and Goonatilake (2016). The species status (indigenous, endemic, migrant, exotic, invasive, etc.) and conservation status (critically endangered, endangered, vulnerable, near threatened, etc.) will be recorded according to the National Red List (MOE, 2012), and literature mentioned above for taxa not included in the red list. Additionally, the Global red list of threatened species was referred only for the vertebrate groups (freshwater fish, amphibians, reptiles, birds and mammals) in order to identify the species of global significance). For the groups of flora, dragonflies and butterflies all nationally threatened species endemic to Sri Lanka were considered as globally significant due to the lack of global red list status for many of those species. All in all, globally threatened species, Sri Lankan endemics, range-restricted species as well as migratory species were counted here as globally significant species found in the Trial Landscapes.

This rapid survey did not incorporate detailed systematic sampling of the biodiversity in Trial Landscapes except for the total species listing in the surrogate taxonomic groups within each sampling locality, representing a single ecosystem type, and with a constant effort in terms of time spent (i.e. one to two hours under clear weather) and

the number of field biologists involved. Such data would therefore allow comparisons of biodiversity between different sites and/or ecosystems/habits as well as periodic monitoring.

In addition to the sampling locations to represent different ecosystems/habitats in three different Trial Landscapes, few other localities were also sampled in order to represent those sites where proposed elephant corridors are crossing human habitation and/or roads. See figure 5 and attached Table 1 for all biodiversity sampling localities.

So that, VES sampling together with additional opportunistic observations outside the samples (to enrich the species lists) were carried out in a seven-day field excursion covering a representative sample of all recorded ecosystems/habitats within each Trial Landscape. Geo-coordinates and the directions of all the biodiversity sampling localities will be recorded where they can be used for monitoring purposes.

Further, it should also be noted that, although the ecosystem listing covered almost the entire project landscape with reference to Trial Landscapes, the species are listed only for Trial Landscapes due to the dearth of published records covering the landscape and the time limitations to have a landscape wide coverage in the preliminary rapid biodiversity survey conducted during the PPG phase.

Additional biodiversity related information

In addition to the above details on ecosystems and species, major ecological services provided by each ecosystem/habitat type, together with threats to biodiversity and human disturbances associated with each habitat were documented qualitatively with a quantitative record of indicators of those, whenever possible/available.

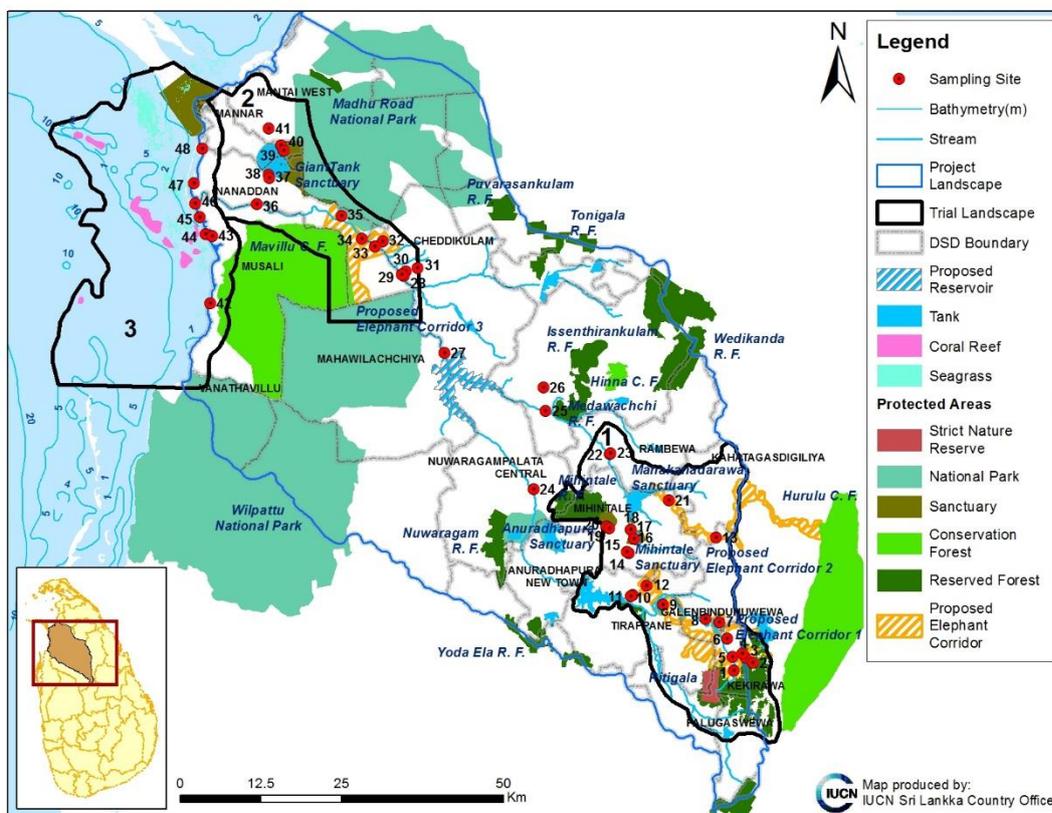


Figure 5. Sampling localities of the rapid biodiversity survey in Trial Landscapes (denoted by 1,2 and 3), including those localities for the *Labeo lankae* status survey (discussed below). Please refer to the descriptions of sampling localities given in the table 22 with the corresponding number given in the map.

Table 22. Sampling localities of the rapid biodiversity survey in Trial Landscapes, including those localities for the *Labeo lankae* status survey (discussed below). Numbers refer to those given in Figure 4.

| Locality No (see map in Fig. 4) | Trial Landscape | Locality Description |
|---------------------------------|-----------------|---|
| 1 | 1 | Kaluebe scrub forest |
| 2 | 1 | Mahadivulweva tank bund |
| 3 | 1 | Mahadivulweva home gardens |
| 4 | 1 | Mahadivulweva deciduous forest |
| 5 | 1 | Kaluebe riverine forest |
| 6 | 1 | Elephant corridor 1 Yakalla scrubland |
| 7 | 1 | Manankattiya wewa catchment forest |
| 8 | 1 | L. lankae survey - Manankattiya anicut |
| 9 | 1 | Eru wewa catchment forest |
| 10 | 1 | Wannamkulama tank bund |
| 11 | 1 | Wannamkulama home gardens |
| 12 | 1 | Elephant corridor 1 Uttimaduwa scrub forest |
| 13 | 1 | Elephant corridor 2 Upuldeniya deciduous forest |
| 14 | 1 | L. lankae survey - Maradankalla tank |
| 15 | 1 | Maradankalla tank bund |
| 16 | 1 | Mihintale Sanctuary Karadikulama tank bund |
| 17 | 1 | Manakkulama tank bund |
| 18 | 1 | Kirindegama tank catchment forest |
| 19 | 1 | Anuradhapura Sanctuary scrub forest |
| 20 | 1 | Anuradhapura Sanc. Kaludiyapokuna rock outcrop forest |
| 21 | 1 | Elephant corridor 2 Seppukulama tank bund |
| 22 | 1 | L. lankae survey - Weli Oya at Nabadagasveva |
| 23 | 1 | L. lankae survey - Weli Oya at Nabadagasveva abd. paddy |
| 24 | 1 | L. lankae survey - Malwathu Oya at Galpalama |
| 25 | 2 | L. lankae survey - Kanadara oya at Tulavelliya |
| 26 | 2 | L. lankae survey - Puleliya tank |
| 27 | 2 | L. lankae survey - Malwathu Oya at Trantirimale bridge |
| 28 | 2 | Old Beehidiya farm homegardens |
| 29 | 2 | L. lankae survey - Malwathu Oya at Beehidiya farm |
| 30 | 2 | Beehidiya farm deciduous forest |
| 31 | 2 | New Beehidiya farm homegardens |
| 32 | 2 | Elephant corridor 3 Parayanalankulam deciduous forest |
| 33 | 2 | L. lankae survey - Tekkama anicut |
| 34 | 2 | L. lankae survey - M oya at Parayanalankulam |
| 35 | 2 | Elephant corridor 3 Parayanalankulam riverine forest |
| 36 | 2 | L. lankae survey - M oya at Kompansalintakulum |
| 37 | 2 | Kollarsirikkulam tank bund |
| 38 | 2 | Chemmantivu homegardens |
| 39 | 2 | Giant's tank catchment forest |
| 40 | 2 | Giant's tank catchment grassland |

| | | |
|----|---|---------------------------------------|
| 41 | 2 | Alamkuluma tank bund |
| 42 | 3 | Kondachchi deciduous forest and villu |
| 43 | 3 | Silavaturai coastal scrubland |
| 44 | 3 | Silavaturai Beach |
| 45 | 3 | Arippu Dorick coastal scrubland |
| 46 | 3 | Arippu estuarine scrubland |
| 47 | 3 | Achchankulum mangrove |
| 48 | 3 | Vankalai coastal scrubland |

Preliminary field survey on the status of the orange-fined labeo

Further to the above rapid biodiversity survey, we also conducted a preliminary investigation on the status of the endemic and range-restricted freshwater fish Orange-fined Labeo (*Labeo lankae*) within the project landscape. It is this species that scored most for the selection of Malwathu Oya basin as the project landscape. Because this is the most important globally significant species within the landscape due to the fact this endemic fish species has restricted its range only to the middle reaches of the Malwathu Oya, a rare phenomenon to find within a dry zone river basin, for which a biogeographical explanation is lacking according to the current understanding. The fish is critically endangered in the global red list and was once thought to have gone extinct from the wild as a possible result of introducing *Labeo rohita* into the dry zone tank systems as a food fish, which could out compete *L. lankae* (Pethiyagoda, 1996). See figure 4 and attached Table 1 for sampling localities of the *Labeo lankae* status survey (discussed below)

According to the literature *Labeo lankae* has historically been recorded from the localities in the Malwathu Oya basin given in table 2 below. However, several other historical records assigned to this species from other basins only by Senanayake (1980) are now believed to be misidentifications, making *Labeo lankae* restricted to Malwathu Oya basin (Sudasinghe *et al.*, 2018; Sampath De A. Goonatilake, pers. comm.).

Table 23. Historical records of *Labeo lankae* as available in literature and through personal communications

| Locality | Latitude | Longitude | Source |
|----------------|-------------|--------------|--|
| Tulawelliya | 8°30'32.9" | 80°25'22.4" | Sudasinghe <i>et al.</i> , 2018 |
| Pulleliya Wewa | 8°32'28.1" | 80°25'11.2" | Sudasinghe <i>et al.</i> , 2018 |
| Ellakkattuwa | 8°32'04.7" | 80°21'48.0" | Sudasinghe <i>et al.</i> , 2018 |
| Tantirimale | 8°35'22.9" | 80°16'42.9" | Ananda Lal Peiris & Naalin Perera, pers. comm. |
| Giant's tank | 8°51'00.0"N | 80°01'59.9"E | Senanayake, 1980 |
| Cheddikulam | 8°39'59.8"N | 80°18'00.0"E | Senanayake, 1980 |
| Kala wewa | 8°00'23.2"N | 80°33'18.2"E | Pethiyagoda, 1991 |
| Nuwarawewa | 8°19'58.9"N | 80°26'01.4"E | Deraniyagala, 1952 |
| Basawakkulama | 8°21'05.0"N | 80°23'12.3"E | Deraniyagala, 1952 |
| Rambewa | 8°26'47.5"N | 80°30'33.5"E | Deraniyagala, 1952 |

During the rapid biodiversity survey the team visited these sites given in Table 23, as well as other possible sites where the species could be found in order to look for its current status. Rapid surveys in in each of the above localities employed the use of snorkeling and hand nets, trapping fish in cast nets, and inspection of commercial catch as well

as collection of secondary information from local fishing communities on the presence of the species and any other possible sites the species could be found from. The preliminary information would lead to a comprehensive survey along the Malwathu Oya and adjacent basins in order to record the presence/absence and an indication of the relative abundance of *Labeo lankae*, together with essential habitat information.

Results of the Rapid Biodiversity Survey

Ecosystem diversity

The “Managing Together” project landscape and adjacent seascape harbours a diversity of natural and man-made ecosystems falling in to the categories of forests, grasslands, standing and running waterbodies, marshlands, beeches, reefs, shallow marine ecosystems, islets and other man-made ecosystems. Table 22. Provides a summary of the ecosystems diversity while the subsequent text sections elaborate on the major ecosystems among them.

Table 24. List of diverse ecosystems found within the “Managing Together” project landscape and the adjacent seascape and their presence within each Trial Landscape.

| Ecosystem Category | Ecosystem Type and their edaphic variants (separated by a hyphen where relevant) | Trial Landscape | | | |
|---|--|-------------------------|---|---|---|
| | | 1 | 2 | 3 | |
| <i>According To NBSAP ecosystem Classification (MEMD, 2016)</i> | | | | | |
| Forests (Tree dominated) | Dry-mixed evergreen forests | √ | √ | × | |
| | Arid-mixed evergreen forests | × | √ | √ | |
| | Dry-mixed evergreen - Rock out crop forests | √ | √ | × | |
| | Isolated hill forests | √ | × | × | |
| | Dry-mixed evergreen - Riverine forests | √ | √ | × | |
| | Arid-mixed evergreen - Riverine forests | × | × | √ | |
| | Sea shore scrublands | × | × | √ | |
| | Palmyra woodlands | × | × | √ | |
| | * Secondary forests | √ | √ | √ | |
| | * Sparse open forests | √ | √ | √ | |
| | * Dry deciduous thorn scrublands | × | √ | √ | |
| | * Forest plantations — Monoculture | √ | √ | × | |
| | Grasslands (Herb dominated) | Dry (damana) grasslands | √ | × | × |
| | | Flood plain grasslands | × | × | √ |
| Dry zone grasslands | | × | × | √ | |
| Drawdown areas of large tanks | | √ | √ | × | |
| Other man-made ecosystems | * Public parks and gardens | √ | × | × | |
| | * Home gardens | √ | √ | √ | |
| | * Abandoned lands and road side | √ | √ | √ | |
| | * Agro plantations — Mixed culture | √ | √ | √ | |
| Lentic (standing) Water Bodies | Fresh and brackish water villus | × | × | √ | |
| | Mangroves | × | × | √ | |
| | Salt marshes | × | × | √ | |
| | Tidal flats | × | × | √ | |
| | * Tanks | × | √ | √ | |

| | | | | |
|-------------------------------|-----------------------|---|---|---|
| | * Ponds | √ | √ | × |
| Lotic (running) Water Bodies | Rivers and streams | √ | √ | √ |
| | Springs | √ | × | × |
| | Estuaries | × | × | √ |
| | * Canals | √ | √ | × |
| Marshlands | Marshes | √ | √ | × |
| | * Paddy fields | √ | √ | √ |
| Beach | Sandy shores | × | × | √ |
| | * Beach landing areas | × | × | √ |
| Reefs | Coral reefs | × | × | √ |
| | Sandstone reefs | × | × | √ |
| Shallow Marine Water (<200 m) | Seagrass meadows | × | × | √ |
| | Seaweeds | × | × | √ |
| | Mud bottoms | × | × | √ |
| | Sand bottoms | × | × | √ |
| Islets | Sandy islets | × | × | √ |

* *an anthropogenic variant of the main ecosystem category*

As shown above the project landscape spans two major bioclimatic zone of the island: the dry zone and the arid (Wijesinghe et al., 1993). The dry zone is represented to a larger extent in the upper and middle reaches of Malwathu Oya basin i.e. the Trial Landscape 1 and the eastern two-thirds of the Trial Landscape 2, which are hence dominated by dry mixed evergreen forests. The arid zone is restricted to the lower reaches of Malwathu Oya, in which Trial Landscape 3 is located and the arid-mixed evergreen forest is found as the major natural ecosystem type. Table 24. Shows how the ecosystem diversity is represented in the series of biodiversity sampling sites (n=48) over the project landscape.

Together with the above major forest types, the project landscape presents a mosaic of several natural and anthropogenic ecosystem types: Riverine evergreen forests, rock out crop forests, dry deciduous thorn scrublands, Home gardens, Abandoned lands and road side (incl. abandoned *chena*, paddy or other agricultural lands), Tanks (incl. abandoned tanks), Estuary, Saltmarshes and Sandy shores. Salient features of those ecosystems/floral habitats are summarized in the following sections, together with notes on their general fauna.

Major Ecosystem descriptions of the landscape

Tropical dry mixed evergreen forests

Typical dry zone mixed evergreen forests are found mainly in Trial Landscapes 1 and 2. They have three recognizable vegetation strata: a 20-25 m high continuous tree canopy, a sub-canopy up to 15 m, shrubs up to 5 m and herbaceous plants below 1 m. Trees are assembled densely in well-developed sites, where a poor growth of shrubby and herbaceous forms is found in the ground layers. Exposed ground is common and the forest regeneration can be observed in many places. Common species include *Habara (Diospyros ovalifolia)*, *Thurana (Diospyros vera)*, *Maila (Bauhinia racemosa)*, *Kora-Kaha (Memecylon umbellatum)*, *Kirikon (Walsura trifoliolata)*, *Burutha (Chloroxylon*

swietania), Tunpath-Kurundu (*Pleiospermium alatum*), Welang (*Pterospermum suberifolium*) and rare Threatened species such as the medicinal plant *Ingini* (*Strychnos potatorum*) and *Palu* (*Manilkara hexandra*).

Of invertebrates, the butterfly species found in these forests include Pierids such as the Vulnerable Plain orange tip (*Colotis aurora*) and Jezebel (*Delias eucharis*). Dragonflies such as the Blue Percher (*Diplacodes trivialis*), Crimson Dropwing (*Trithemis aurora*) and Wandering Glider (*Pantala flavescens*) can also be spotted.

Amphibians are few, consisting only of Common house toads (*Duttaphrynus melanostictus*) and Common paddy field frogs (*Minervarya shydrensis*). In contrast, reptiles show a moderate diversity with the presence of endemic species such as the Common lankaskink (*Lankascincus fallax*) and Checkered Keelback (*Xenochrophis cf. piscator*). The Nationally Threatened Indian star tortoise (*Geochelone elegans*) are also found in these shaded areas. Tropical dry mixed evergreen forests provide microhabitats for common species of serpentoid reptiles such as the Cobra (*Naja naja*), the Russel's and Merrum's hump-nosed vipers (*Daboia russelii* and *Hypnale hypnale*).

Endemic bird species recorded from the forested habitats of the Trial Landscape include Sri Lanka junglefowl (*Gallus lafayettii*), Sri Lanka Wood-shrike (*Tephrodornis affinis*), Sri Lanka lesser flameback (*Dinopium psarodes*), Sri Lanka Barbet (*Psilopogon rubricapillus*), Sri Lanka grey hornbill (*Ocyceros gingalensis*), Sri Lanka Swallow (*Cecropis hyperythra*), Sri Lanka green pigeon (*Treron pompadora*), Sri Lanka Black-capped Bulbul (*Pycnonotus melanicterus*) and the Sri Lanka Scimitar-babbler (*Pomatorhinus melanurus*). The vast majority of species recorded here were breeding residents predominantly consisting of smaller forest dwelling birds including Loten's and Purple sunbirds (*Cinnyris lotenius* and *Cinnyris asiatica*).

The mammals of dry mixed evergreen forests include the Purple-faced leaf monkey (*Semnopithecus vetulus*), Sri Lanka mouse-deer (*Moschiola meminna*) and the Sri Lanka toque monkey (*Macaca sinica*), all of which are endemic to Sri Lanka. The Asian elephant (*Elephas maximus*), Purple-faced leaf monkey (*Semnopithecus vetulus*) and the Sri Lanka toque monkey (*Macaca sinica*) are the Threatened mammals found in this habitat. Other mammal species include the Porcupine (*Hystrix indica*), Barking deer (*Muntiacus malabaricus*) and Spotted deer (*Axis axis*).

Tropical arid mixed evergreen forests

This forest type is found only in the Trial Landscape 3 and the western one third of the Trial Landscape 2. It does not differ much from the dry mixed-evergreen forests, as this is its arid zone counterpart. Nevertheless, these forests have few differences to the above in terms of different species getting dominance and more frequent presence of thorny scrub species. Tropical arid mixed evergreen forests are thick impenetrable thorny or spiny, woody vegetation growing upto 4m-6m in height. Two major strata can be recognized; the shrub canopy and the layer of herbaceous (upto 0.5m) plants that grow underneath; which may be interspersed with larger trees. Some of the plant species that are growing in these areas are well adapted to xerophytic conditions due to the prevailing dry conditions. Some such adaptations include having thick leaves with well-developed surface structures to protect them from strong sunlight and minimise evaporation, the production of seeds that can successfully remain dormant until the commencement of the rainy season, possessing vegetation that can withstand heavy structural damage caused by herbivores, drought or wind, and the ability to recover in the wet season.

Table 25. Representations of major terrestrial ecosystems along the Malwathu Oya basin in 48 biodiversity sampling sites of the survey

| According To NBSAP ecosystem Classification (MEMD, 2016) | | | Trial Landscape | Location respect to terrestrial biodiversity survey | | | | | |
|--|----------------------------|-------------------------------|---------------------|---|--|-------------------------------------|--|-----------|---------------------|
| Main category | Edaphic and Other variant | Anthropogenic | | no | Location (Biodiversity survey) | Long | Lat | | |
| Arid-mixed evergreen forests | | | 2 | 32 | Elephant corridor Parayanalamkulum | 80.192724 | 8.747766 | | |
| | Riverine evergreen forests | | 2 | 33 | Near Malwathu Oya Bridge at Kompansalintakulum | 80.015328 | 8.799501 | | |
| Dry-mixed evergreen forests | | | 1 | 13 | Mahadivulveva spring | 80.699098 | 8.167364 | | |
| | | | 2 | 40 | Between two settlement (Bihidiya) | 80.224693 | 8.705821 | | |
| | Rock out crop forests | | 1 | 5 | Kunudiya pokuna | 80.508239 | 8.346376 | | |
| | Riverine evergreen forests | | | 1 | 1 | Kirinde gama | 80.542215 | 8.341607 | |
| | | | | 1 | 10 | Manankattiya anicut | 80.648065 | 8.216256 | |
| | | | | 1 | 11 | Kaluebe village | 80.68541 | 8.163095 | |
| | | | | 1 | 20 | Nabadagasveva village | 80.512902 | 8.448411 | |
| | | | | 1 | 21 | Galpalama_Malwathu Oya | 80.405944 | 8.398694 | |
| | | | | 2 | 23 | Tulavelliya village | 80.422494 | 8.509397 | |
| | | | | 2 | 24 | Tekkama anicut | 80.181845 | 8.74061 | |
| | | | | 2 | 31 | Malwathu Oya_near Suspension bridge | 80.163367 | 8.751411 | |
| | | | | 2 | 41 | Old Bihidiya farm | 80.222536 | 8.69895 | |
| | | | | Dry deciduous thorn scrublands | | | 1 | 4 | Mihintale Sanctuary |
| | 1 | 9 | Uttimaduwa village | | | | 80.565107 | 8.262573 | |
| | 1 | 12 | Ulhitikanda village | | | | 80.687493 | 8.143882 | |
| | 3 | 45 | Kondachchi village | | | | | | |
| Other Man-made ecosystems | | Home gardens | 1 | 7 | Vannamkulama village | 80.544967 | 8.249655 | | |
| | | | 1 | 14 | Mahadivulveva village | 80.704026 | 8.161505 | | |
| | | | 2 | 25 | Kollar Sirikkulam village | 80.032712 | 8.836924 | | |
| | | | 2 | 39 | New Bihidiya farm | 80.241622 | 8.710092 | | |
| | | Abandoned lands and road side | | | 1 | 16 | Elephant corridor near Yakalla – Abandoned chena | 80.67813 | 8.18842 |
| | | | | | 1 | 17 | Upuldeniya_6 miles post – Abandoned chena | 80.662065 | 8.330822 |

| | | | | | | | |
|--------------------------------|--------------|------|---|----|--|-----------|----------|
| | | | 2 | 28 | Giant Tank near DWC center – Abandoned agri-land | 80.052366 | 8.875608 |
| | | | 2 | 30 | Elephant corridor _Madu junction – Abandoned agri-land | 80.134767 | 8.783571 |
| | | | 1 | 19 | Nabadagasveva village – Abandoned paddy | 80.514018 | 8.449797 |
| | | | 3 | 34 | Silavaturai – Abandoned paddy | 79.952284 | 8.754969 |
| | | | 1 | 18 | Seppukulama Tank - – Abandoned paddy | 80.595485 | 8.383212 |
| Lentic (standing) Water Bodies | | Tank | 1 | 2 | Manakkulama Tank | 80.542779 | 8.341608 |
| | | | 1 | 3 | Maradankalla Tank | 80.539297 | 8.309278 |
| | | | 1 | 6 | Karadikulam Tank | 80.547353 | 8.329047 |
| | | | 1 | 8 | Vannamkulama Tank | 80.542083 | 8.248065 |
| | | | 1 | 15 | Mahadivulveva Tank | 80.714461 | 8.154788 |
| | | | 1 | 43 | Eru wewa | | |
| | | | 1 | 44 | Manankattiya wewa | | |
| | | | 2 | 22 | Puleliya Tank | 80.419324 | 8.542306 |
| | | | 2 | 26 | Semmantive_ Gaint Tank | 80.031723 | 8.841497 |
| | | | 2 | 29 | Giant tank_ pitiya | 80.048725 | 8.883006 |
| | | | 2 | 27 | Alam Kulum | 80.03186 | 8.906034 |
| Rivers and streams | Estuary | | 3 | 37 | Arippu_ Malwathu Oya estuary | 79.928106 | 8.800161 |
| | | | 3 | 38 | Achchankulum_ Malwathu Oya estuary | 79.926322 | 8.828891 |
| Salt marsh | Salt marsh | | 3 | 42 | Vankalai | | |
| Beach | Sandy shores | | 3 | 35 | Silavaturai | 79.94282 | 8.757497 |
| | | | 3 | 36 | Doric building _Arippu | 79.934829 | 8.781214 |

Dominant plant species of Tropical arid mixed evergreen forests are *Kaludai (Acacia eburnea)*, *Andara (Dichrostachys cinerea)*, *Torikei (Capparis divaricata)*, *Neralu (Cassine glauca)*, *Heen-Katu-Pila (Iueggea leucopyrus)*, *Malittan (Salvadora persica)*, *Tudari (Scutia myrtina)*, *Heen Eraminiya (Ziziphus oenoplia)* and *Maha-Debara (Ziziphus mauritiana)*.

Of invertebrates, the butterfly species found in these forests include Angled castor (*Ariadne ariadne*), Plain Tiger (*Danaus chrysippus*) and Yellow orange tip (*Ixias pyrene*). Dragonflies such as the Blue Percher (*Diplacodes trivialis*), Sociable Glider (*Tramea limbata*) and Wandering Glider (*Pantala flavescens*) can also be spotted.

Among the vertebrates, only a single amphibian species - Common paddy field frogs (*Minervarya shydrensis*) - has been recorded from area. Among the recorded reptiles species Devaka's Fan-throat lizard (*Sitana devakai*), Flapshell turtle (*Lissemys ceylonensis*) and Spotted skink (*Eutropis madaraszi*) endemic to Sri Lanka. Further, tropical arid mixed evergreen forests provide habitat for serpentoid reptiles such as the Indian python (*Python molurus*), Russel's viper (*Daboia russelii*) and The common krait (*Bungarus caeruleus*).

The only endemic bird species recorded from the forested habitats of the area is Sri Lanka Green-pigeon (*Treron pompadora*). Most of the bird species recorded here were breeding residents predominantly consisting of forest dwelling birds including Coppersmith Barbet (*Psilopogon haemacephalus*), Common Hoopoe (*Upupa epops*) and Black-rumped Flameback (*Dinopium benghalense*).

The mammals of Tropical arid mixed evergreen forests include the Sri Lanka mouse-deer (*Moschiola meminna*) and the Sri Lanka toque monkey (*Macaca sinica*), which are endemic to Sri Lanka. The Asian elephant (*Elephas maximus*), Sloth bear (*Melursus ursinus*), Fishing cat (*Prionailurus viverrinus*) and the Sri Lanka toque monkey (*Macaca sinica*) are the Threatened mammals found in this habitat. Other mammal species include the Grey mongoose (*Herpestes edwardsii*), Otter (*Lutra lutra*) and Spotted deer (*Axis axis*).

Riverine forests

The stream network of the Trial Landscape is flanked by riverine forests. The distribution of this vegetation type can be as narrow as a few metres where banks are steeper and over 10 m wide in the flat areas of the stream. Vegetation height is about 20-35 m with almost a closed canopy belt of forests. A sub-canopy (10 m) and a layer of shrubs/herbs (0.5-3 m) can also be distinguished. The nature of this habitat could be attributed to the unlimited availability of ground water throughout the year. Common species such as *Kumbuk (Terminalia arjuna)*, *Thimbiri (Diospyros malabarica)*, *Magul-Karanda (Pongamia pinnata)*, *Era-Midella (Barringtonia acutangula)*, *Kota-Dimbula (Ficus hispida)*, *Attikka (Ficus racemosa)*, *Rathambala (Ixora coccinea)* and *Mi (Madhuca longifolia)* are complimented by rarer medium sized *Gonapana (Garcinia spicata)*, large deciduous *Hulanhik (Chukrasia tabularis)*, Threatened orchid species such as *Retta (Vanda tessellata)*, *Vanda spathulata* and the aquatic Threatened endemic *Athiudayan (Cryptocoryne wendtii)*.

Thick root system of trees and shrubs act as a protective cushion covering the banks and preventing erosion. During northeast monsoon rains (during November-January), riverine forests become fully flooded and recharged with soil nutrients and organic debris from upstream areas.

The Threatened damselfly Adam's gem (*Libellago adami*), endemic to Sri Lanka, is also found in riverine forests, but is more common in riverine forests found within tropical moist evergreen forests of the intermediate zone.

Among the damselflies in these forests are species such as the endemic Stripe-headed Threadtail (*Prodasineura sita*). Threatened Butterfly species such as the Joker (*Byblia ilithyia*) and Spot swordtail (*Graphium nomius*) are the other uncommon invertebrates found in riverine forests.

Among the freshwater fish species, the Endemic and threatened Orange fin labeo (*Labeo lankae*), is noteworthy as it is Critically Endangered. Other endemics include the Dryzone Butter catfish (*Ompok ceylonensis*) and cyprinids; Filamented Barb (*Dawkinsia singhala*), Stone sucker (*Garra ceylonensis*), Common labeo (*Labeo heladiva*), Lanka labuca (*Labuka lankensis*), Tic tac-toe barb (*Pethia melanomaculata*), Swamp barb (*Puntius thermalis*), Horadandia (*Horadandia atukorali*) and Olive barb (*Systemus spilurus*) which are found in riverine forests.

No endemic amphibians were recorded from riverine forests. Non-endemic amphibians of the area include the Common paddy field frog (*Minervarya shyadrensis*), Skipper frog (*Euphlyctis mudigere*) and Jerdon's bull frog (*Hoplobatrachus crassus*). Riverine forests also support many endemic reptiles such as Flapshell turtle (*Lissemys ceylonensis*), Kandyan gecko (*Hemidactylus depressus*), Spotted skink (*Eutropis madaraszii*), Common lankaskink (*Lankascincus fallax*), Checkered Keelback (*Xenochrophis cf. piscator*) and The checkered keelback (*Xenochrophis asperrimus*). Mugger crocodiles (*Crocodylus porosus*) also inhabit these waters.

Endemic bird species recorded from the riverine forest habitats of the project area include Sri Lanka junglefowl (*Gallus lafayettii*), Sri Lanka Wood-shrike (*Tephrodornis affinis*), Sri Lanka lesser flameback (*Dinopium psarodes*), Sri Lanka Barbet (*Psilopogon rubricapillus*), Sri Lanka grey hornbill (*Ocyrceros gingalensis*) and the Sri Lanka green pigeon (*Treron pompadora*).

The mammals of riverine forests include the Purple-faced leaf monkey (*Semnopithecus vetulus*), Sri Lanka mouse-deer (*Moschiola meminna*) and the Sri Lanka toque monkey (*Macaca sinica*), all of which are endemic to Sri Lanka. Threatened Otters (*Lutra lutra*) build their dens on these secluded riverbanks. Larger mammals are also drawn to these forests as they provide a water source.

Rock outcrops forests

Rock outcrop forests are less dense and reach up to 10 m height. The ground is highly heterogeneous and plants grow among boulders and rock crevices. Ground water retention is usually very poor due to a thin soil layer. The forest canopy is discontinuous and has two strata. Leaves of the woody flora are mostly microphyllous and deciduous. Many plants have thorny or spiny structures, and show adaptations to extreme drought conditions. The under story is not so dense. The rock-outcrops habitat shows a patchy distribution over the landscape. Well-adapted flora includes the antique spurge *Daluk* (*Euphorbia antiquorum*), the medicinal *Bu-Getiya* (*Hugonia mystax*), *Panu-nuga* (*Ficus microcarpa*), *Wal-Aralu* (*Ficus mollis*), *Tarana* (*Tarenna asiatica*) and rarer *Niyanda* (*Sansevieria zeylanica*), *Gini bulu* (*Diospyros montana*) and the endemic *Gal-Wira* (*Drypetes gardneri*) as plants occupying rocky areas.

Fauna that are found in rock outcrop forests are not different to those of tropical dry mixed evergreen forests. However, there is a greater abundance of reptile species such as geckos, including the Common house-gecko (*Hemidactylus frenatus*), Spotted house-gecko (*H. parvimaculatus*), Termite hill gecko (*Hemidactylus lankae*) and Bark gecko (*Hemidactylus leschenaultii*) as well as the skinks and monitors such as the endemic Common

lankaskink (*Lankascincus fallax*), Common skink (*Eutropis carinata*), Land monitor (*Varanus bengalensis*) and Water monitor (*Varanus salvator*). This is because there are additional niches and breeding sites provided by the rock crevices for such reptiles. Turtles such as the endemic Flapshell turtle (*Lissemys ceylonensis*) and Parker's black turtle (*Melanochelys trijuga*) are also present at the rock pools in these forests.

Dry deciduous thorn scrublands

Dry deciduous thorn scrublands are characterised as an open woodland with short, thorny trees and shrubs with occasional patches of dry grasses atop open soils depending on the season. Humus levels are generally low and erosion can be problematic in disturbed habitats. Common species of flora include *Gerandi-Dul* (*Ichnocarpus frutescens*), *Thurana* (*Diospyros vera*), *Gas-Keppetiya* (*Croton laccifer*), *Kuratiya* (*Phyllanthus polyphyllus*), *Acacia planifrons*, *Maila* (*Bauhinia racemosa*), *Andara* (*Dichostachys cinerea*), *Ranawara* (*Senna auriculata*), *Scutia myrtina*, *Hin-Eraminia* (*Zizyphus oenopila*), *Kukuruman* (*Catunaregam spinosa*), *Wel-keliya* (*Grewia orientalis*) and *Demata* (*Gmelina asiatica*). Endemic species include *Hin-botiya* (*Vernonia zeylanica*) and the Endangered *Kalu-habaraliya* (*Diospyros ebenoides*). Exotics such as *Ehela* (*Cassia fistula*), *Ganda-pana* (*Lantana camera*) and *Cordia curassavica* often establish footholds in disturbed areas.

Of butterflies, endemic Lesser albatross (*Appias galane*) are among the Pierids found in dry deciduous thorn scrublands. Endemic Red narrow mouth frogs (*Microhyla mihinthalai*) are one of the few amphibian species found in these dry habitats.

The dry scrub is host to endemic birds including Sri Lanka junglefowl (*Gallus lafayettii*), Sri Lanka Wood-shrike (*Tephrodornis affinis*), Sri Lanka lesser flameback (*Dinopium psarodes*), Sri Lanka Barbet (*Psilopogon rubricapillus*), Sri Lanka grey hornbill (*Ocyrceros gingalensis*), Sri Lanka Swallow (*Cecropis hyperythra*), Sri Lanka green pigeon (*Treron pompadora*) and the Sri Lanka Black-capped Bulbul (*Pycnonotus melanicterus*). Smaller species including the Pale-billed Flowerpecker (*Dicaeum erythrorhynchos*), Purple-rumped Sunbird (*Leptocoma zeylanica*), Purple Sunbird (*Cinnyris asiatica*), White-rumped Munia (*Lonchura striata*) and Scaly-breasted Munia (*Lonchura punctulata*) make use of such habitat.

Like other forested habitats, the endemic Sri Lanka mouse-deer (*Moschiola meminna*) and the Sri Lanka toque monkey (*Macaca sinica*) can also be found here. The thorny scrub poses no obstacle to larger herbivores such as the Endangered Elephant (*Elephas maximus*).

Home gardens

This is a semi-natural system deliberately manipulated by humans, while at the same time, wild species are incorporated and co-habit. Usually, three strata are recognisable: the canopy up to 20 m, sub-canopy 8 m and ground flora 2 m. The woody plants are mostly crop species. The density of canopy and spatial distribution of plants are highly variable depending on the individual management practice of the owner of the land. The effective area of the home garden unit is approximately 0.5 but larger units are not uncommon. Native species include *Kon* (*Schleichera oleosa*), *Halmilla* (*Berrya coridifolia*) and the Threatened *Goda-Kaduru* (*Strychnos nux-vomica*). Exotics are far more dominant, represented by species such as Coconut (*Cocos nucifera*), Mango

(*Mangifera indica*), Areca nut (*Areca catechu*), Kohomba (*Azadirachta indica*) and rarely, cashew (*Anacardium occidentale*).

The fauna of home gardens includes include butterflies such as the Plain tiger (*Danaus chrysippus*), Common tiger (*Danaus gentua*), Crimson rose (*Pachliopta hector*), Common Crow (*Euploea core*) and the endemic Lesser albatross (*Appias galane*). Snakes including The common krait (*Bungarus caeruleus*), Indian cobra (*Naja naja*), Russell's viper (*Daboia russelii*) and The Merrem's hump nose viper (*Hypnale hypnale*) often pose as a threat to residents as they are attracted to small rodents.

Many passerine birds occupy all possible strata in home gardens from tree canopies to the ground.

Mammals such as the Grey langur (*Semnopithecus priam*), Grey mongoose (*Herpestes fuscus*), Indian porcupine (*Hystrix indica*), Wild boar (*Sus scrofa*), Palm squirrel (*Funambulus palmarum*), Giant squirrel (*Ratufa macroura*) and Black-naped hare (*Lepus nigricollis*) are observed frequently in home gardens while elephants (*Elephas maximus*) are also known to frequent these areas, causing damage to houses.

Abandoned chena and agricultural and paddy lands

Vegetation in these habitats are highly variable depending on the time elapsed after abandonment. It is more closely related to the scrublands in older sites and differs on account of its relatively sparse vegetation and the presence of some perennial crop species abandoned after *chena* cultivation. Depending on the site-specific circumstances like the length of fallow period, disturbance by fire or herbivore the structure may not be uniform. The plant assemblage consists mostly of exotic species that have adapted to adverse conditions. Species such as *Podi singno maran* (*Chromolaena odorata*), *Gam palu* (*Mikania cordata*), *Ehela* (*Cassia fistula*), *Siyambala* (*Tamarindus indica*), *Gini tana* (*Panicum maximum*) and *Ganda-pana* (*Lantana camera*) are the common pioneering exotics. Among the native species are *Polkudu pala* (*Aerva lanata*), *Wal indi* (*Phoenix pusilla*), *Ela Wara* (*Calotropis gigantea*), *Keta-Kela* (*Bridelia retusa*), *Heen Katu pila* (*Flueggea leucopyrus*), *Maila* (*Bauhinia racemosa*), *Kala-wel* (*Derris scandens*), *Ahu* (*Morinda coreia*) and *Divul* (*Limonia acidissima*). As in scrublands, the plants produce seeds that can remain dormant successfully until the rainy season commences.

Faunal species composition in abandoned *chena* and agricultural land is a mixture of scrubland fauna mentioned above and those of home gardens given below. Abandoned agricultural land provided suitable habitat for a plethora of butterfly species. Nymphalids such as the Common crow (*Euploea core*), Chocolate soldier (*Junonia iphita*), Lemon pansy (*Junonia lemonias*) and Pierids such as the Threatened Crimson tip (*Colotis danae*) among others showed a preference to these anthropogenic habitats. Endemic reptiles such as the Common lankaskink (*Lankascincus fallax*) and Devaka's Fanthroat lizard (*Sitana devakai*) were present in abandoned *chena* and agricultural land respectively.

Fewer endemic bird species are present in these disturbed habitats. Endemic bird species recorded from the forested habitats of the project area include Sri Lanka junglefowl (*Gallus lafayettii*), Sri Lanka Wood-shrike (*Tephrodornis affinis*) and Sri Lanka green pigeon (*Treron pompadora*). Sri Lanka toque monkeys (*Macaca sinica*) are the only endemic species of mammals which use these habitats and more generalist species including the Indian porcupine (*Hystrix indica*) and Wild boar (*Sus scrofa*) are found here.

Unlike other habitats mentioned above, the vegetation structure of paddy fields is purely governed by humans. The structure is simple, consisting herbaceous layer up to 75 cm. The structure of a particular site is highly variable and needs to be explained in relation to the specific time of the year. Short-term variations are easily observed. Depending on the availability of water, a site may possess paddy, weed flora or annual crops in different months of the year. Similarly, biomass cover is also highly variable and subjected to frequent disturbances due to wild animals. The highly disturbed nature of this habitat type may lend it to have a large portion of invasive flora such as *Thal* (*Borassus flabellifer*), *Podi singno maran* (*Chromolaena odorata*), *Cordia curassavica*, *Acacia auriculiformis*, *Ali thala* (*Hyptis suaveolens*), *Kohomba* (*Azadirachta indica*) and *Gini tana* (*Panicum maximum*). Large trees including *Kumbuk* (*Terminalia arjuna*), *Ela Wara* (*Calotropis gigantean*) and the Threatened *Karawu* (*Margaritaria indica*) may also be present.

These abandoned paddy lands are important for a range of butterflies such as the Crimson rose (*Pachliopta hector*) Mottled emigrant (*Catopsilia pyranthe*), Small salmon arab (*Colotis amata*), Jezebel (*Delias eucharis*), African Babul Blue (*Azanus jesus*) and Common Pierrot (*Castalius rosimon*). Dragonflies such as the Blue percher (*Diplacodes trivialis*) are also found here.

Among reptiles, the threatened and endemic Spotted skink (*Eutropis madaraszi*) can be found here. Birds such Red-wattled lapwings (*Vanellus indicus*), Paddy field pipits (*Anthus rufulus*), Asian Green Bee-eater (*Merops orientalis*) and Scaly-breasted munias (*Lonchura punctulata*) are found here.

Common mammal species of paddy fields include the Black-naped hare (*Lepus nigricollis*) and Wild boar (*Sus scrofa*). Of particular note with regards to avifauna is the Indian Spot-billed Duck (*Anas poecilorhyncha*), Crab-plover (*Dromas ardeola*), Indian Courser (*Cursorius coromandelicus*) and Caspian Tern (*Hydroprogne caspia*), all of which are Critically Endangered. The presence of Gadwall (*Mareca strepera*), African Comb Duck (*Sarkidiornis melanotos*), Northern Shoveler (*Spatula clypeata*), Garganey (*Spatula querquedula*), Ruddy Shelduck (*Tadorna ferruginea*) and Greater Flamingo (*Phoenicopterus roseus*) highlight the importance of this habitat for migratory species. In the terrestrial habitats Grey Francolin (*Francolinus pondicerianus*) is abundant.

Mammals include the Grey mongoose (*Herpestes edwardsii*), Common musk shrew (*Suncus murinus*), and the Black-naped hare (*Lepus nigricollis*).

Tanks and reservoirs

Hydrophytic tank vegetation is characterised by the majority of aquatic herbaceous plants. Depending upon the water depth and its duration, the vegetation is characterised by the abundance of emergent, rooted, floating or submerged hydrophytes. They rarely exceeded 1 m in height, with 25 cm often being the average height. The flora in general is dominated by *Coldenia* (*Coldenia procumbens*), *Dimi-biya* (*Heliotropium indicum*), *Kumbuk* (*Terminalia arjuna*), *Thimbiri* (*Diospyros malabarica*), *Magul-Karanda* (*Pongamia pinnata*), *Kota-Dimbula* (*Ficus hispida*), *Attikka* (*Ficus racemosa*), *Ma-Dan* (*Syzygium cumini*), *Nelum* (*Nelumbo nucifera*), *Et-olu* (*Nymphaea pubescens*), *Nebeda* (*Vitex leucoxylon*) and the IAS *Salvinia* (*Salvinia molesta*). *Kaduru-ketiya wel* (*Combretum albidum*), *Mi* (*Madhuca longifolia*) and Threatened species *Karawu* (*Margaritaria indica*), the orchids *Retta* (*Vanda tessellata*) and *Vanda spathulata* are some of the rarer species found in these semi-aquatic habitats.

Dragonflies include species such as the Crimson dropwing (*Trithemis aurora*), Asian groundling (*Brachythemis contaminata*), Pied parasol (*Neurothemis tulia*), Yellow waxtail (*Ceragrion coromandelianum*), Asian pintail (*Acisoma panorpoides*), Oriental scarlet (*Crocothemis servilia*) and the Green Skimmer (*Orthetrum sabina*). Fringes of tanks and reservoirs provide ideal habitats for an array of butterflies including the Lime butterfly (*Papilio demoleus*), Common Mormon (*Papilio polytes*), Lemon emigrant (*Catopsilia pomona*), Common crow (*Euploea core*), Mottled emigrant (*C. pyranthe*), Plain tiger (*Danaus chrysippus*), Blue tiger (*Tirumala limniace*), Peacock pansy (*Junonia almana*), Tiny Grass Blue (*Zizula hylax*) and Lesser Grass Blue (*Zizina otis*).

Freshwater tanks and reservoirs are important can as they harbour a characteristic assemblage of aquatic and associate fauna.

Fish species include the endemic Swamp barb (*Puntius thermalis*). Common species include the Silver barb (*Puntius vittatus*), Narrow line rasbora (*Rasbora microcephalus*), Murrel (*Channa striata*), Dwarf panchax (*Aplocheilichthys parvus*), Spiketailed paradisefish (*Pseudosphromenus cupanus*) and Marbled spiny eel (*Mastacembelus armatus*). There are also two exotic species, the Nile tilapia (*Oreochromis niloticus*) and Rohu (*Labeo rohita*), both of which were deliberately introduced as food species.

The Skipper frog (*Euphlyctis mudigere*), Common paddy field frog (*Minervarya shydrensis*) and Jerdon's bull frog (*Hoplobatrachus crassus*) are common amphibians in tanks. Also present is the endemic Rohan's pugsnout frog (*Uperodon rohani*). Endemic reptiles include the Flapshell turtle (*Lissemys ceylonensis*), The checkered keelback (*Xenochrophis asperimus*) and Devaka's Fanthroat lizard (*Sitana devakai*). Other common reptiles include the Mugger crocodile (*Crocodilus porosus*) and the Water monitor (*Varanus salvator*).

Avifauna include an array of birds such as the Lesser Whistling-duck (*Dendrocygna javanica*), Cotton pygmy-goose (*Nettapus coromandelianus*), Little grebe (*Tachybaptus ruficollis*), Common Kingfisher (*Alcedo atthis*), Stork-billed Kingfisher (*Pelargopsis capensis*), White-breasted Kingfisher (*Halcyon smyrnensis*), Asian Woollyneck (*Ciconia episcopus*), Little cormorant (*Microcarbo niger*), Indian cormorant (*Phalacrocorax fuscicollis*), Spot-billed pelican (*Pelecanus philippensis*), and the Painted stork (*Mycteria leucocephala*), as well as the winter visitors Green Sandpiper (*Tringa ochropus*), Wood Sandpiper (*Tringa glareola*) and the Whiskered tern (*Chlidonias hybrida*).

Mammalian fauna found near tanks include Threatened species such as the Asian elephant (*Elephas maximus*), Fishing cat (*Prionailurus viverrinus*) and the Eurasian otter (*Lutra lutra*). The Jungle cat (*Felis chaus*) and Jackal (*Canis aureus*) are some of the mammalian carnivores which prowl the peripheries.

Beach

Beach flora is dominated by low growing, salinity tolerance plants, some of which are exotic. Native species include Suriya (*Thespesia populnea*), Wel dehi (*Azima tetraacantha*), Midhi (*Premna obtusifolia*) and Maharawana-revula (*Spinifex littoreus*). The Exotic IAS Katu-pathok (*Opuntia dillenii*) and Podi singno maran (*Chromolaena odorata*) are joined by coconut (*Cocos nucifera*) and Thal (*Borassus flabellifer*).

Common fauna on beaches include butterflies such as the Crimson rose (*Pachliopta hector*), Small salmon arab (*Colotis amata*), Crimson tip (*Colotis danae*), Little orange tip (*Colotis etrida*), Striped Pierrot (*Tarucus nara*) and

the Plain orange tip (*Colotis aurora*). Dragonflies are relatively few in diversity represented by the Wandering Glider (*Pantala flavescens*).

Herpetofauna are represented by reptiles such as the Parker's black turtle (*Melanochelys trijuga*) and the Common garden lizard (*Calotes versicolor*). Birds such as The Brown Shrike (*Lanius cristatus*), Long-tailed Shrike (*Lanius schach*), White-bellied Sea-eagle (*Haliaeetus leucogaster*), the migratory Whiskered Tern (*Chlidonias hybrida*), Red-wattled Lapwing (*Vanellus indicus*), Rock Dove (*Columba livia*), Rose-ringed Parakeet (*Psittacula krameri*) and Asian Palm-swift (*Cypsiurus balasiensis*) are found here. Additionally, Domestic dogs (*Canis familiaris*) was the most frequent among few mammals found on beach habitats of the study area.

Estuaries and Mangroves

Estuaries are dominated by salinity tolerant, semi aquatic species including mangroves which serve as crucial habitat for migratory birds and fish for spawning. Natives such as *Midhi* (*Premna obtusifolia*), *Umiri* (*Suaeda vermiculata*), *Maha sarana* (*Sesuvium portulacastrum*), *Kadol* (*Rhizophora mucronata*), *Muhudu Wara* (*Pemphis acidula*), and the Threatened *Sonneratia alba* are the predominant species accompanied by exotic species such as Tamarind (*Tamarindus indica*) and the IAS *Katu-siyambala* (*Prosopis juliflora*).

The Asian groundling (*Brachythemis contaminata*) is one of the few dragonfly species found along estuaries which are also poorly suited for butterflies.

Estuaries, like marshes support an assemblage of aquatic fauna including Glass fish (*Ambassis sp.*), Deep body silver biddy (*Gerres abbreviates*), Flat head mullet (*Mugil cephalus*) and Spotted scat (*Scatophagus argus*) which are suited to euryhaline waters.

Common paddy field frog (*Minervarya shydrensis*) can be found here despite the salinity and common reptiles such as Land monitor (*Varanus bengalensis*), Indian python (*Python molurus*), Rat snake (*Ptyas mucosa*), Common krait (*Bungarus caeruleus*), Indian cobra (*Naja naja*) and Russell's viper (*Daboia russelii*) can be found here.

Migratory birds include Black-tailed Godwit (*Limosa limosa*), Bar-tailed Godwit (*Limosa lapponica*), Marsh Sandpiper (*Tringa stagnatilis*), Green Sandpiper (*Tringa ochropus*), Wood Sandpiper (*Tringa glareola*) and Common Sandpiper (*Actitis hypoleucos*) while common breeding residents such as Western Spotted Dove (*Spilopelia suratensis*), Black-rumped Flameback (*Dinopium benghalense*), Brown-headed Barbet (*Psilopogon zeylanicus*) and Coppersmith Barbet (*Psilopogon haemacephalus*) are also common to estuaries.

The few mammals which venture forth to estuary edges include Palm squirrel (*Funambulus palmarum*) and Black-naped hare (*Lepus nigricollis*).

Salt Marshes

Marshlands remain inundated for several months of the year in *maha* season when dry zone receives heavy rains. The soil substrate of marsh is muddy and unstable. As a result, the plant life is comprised mostly of wetland herbaceous salt-tolerant communities; seasonally flooded grass communities, reeds and broad leaf aquatic vegetation. Under these conditions, floating plants disappear gradually, and their places are occupied by amphibious plants which can live successfully in aquatic as well as aerial environments. The foliage leaves of

such plants are exposed much above the surface of the water, and the roots are generally submerged in mud. The foliage cover cuts off sunlight from reaching underneath. Under such conditions, neither submerged nor floating plants can survive. The trapping of nutrients and plant debris by sedges reduces the depth of the water. Specialises salt-marsh vegetation in Vankalai Arrippu and Silavathurai areas consists predominantly of species such as *Halosarcia indica*, *Salicornia brachiata* and *Suaeda* spp. Among the common dragonflies found here are the Asian Groundling (*Brachythymis contaminata*), Wandering Glider (*Pantala flavescens*) and the Sociable Glider (*Tramea limbata*). These marshes, like tanks (see below) also support an assemblage of aquatic fauna including Glass fish (*Ambassis sp.*), Deep body silver biddy (*Gerres abbreviatus*), Flat head mullet (*Mugil cephalus*) and Spotted scat (*Scatophagus argus*).

Species diversity of the landscape

As explained earlier, the species diversity is provided mainly based on the rapid biodiversity survey conducted over seven days in September 2018, supplemented with the secondary data readily available for the rapid literature review. It was unfortunate that the period the field survey was conducted fall within one of the worst drought periods during the recent past, which was unavoidable as the survey had to be completed during the PPG phase of the project leaving enough time for report generation and use it for the development of the project document. Nevertheless, the checklists of species compiled are well represented by a majority of the species composition, while few of the vagrant or very rare species may have not been included. Nevertheless, it is suggested to revisit the sites during the early stages of the project following a methodology similar to the National Conservation Review in which the Northern and Eastern Provinces were excluded due to the armed conflicts during the time (IUCN, WCMC & FAO, 1997) and to conduct a thorough literature review especially on several decades of Ceylon Bird Club notes for the Giant's Tank area in order to zone that sensitive ecosystem mosaic for sustainable uses including tourism development.

Results on the species diversity of flora and fauna are presented separately for the three Trial Landscapes tabulated with species richness, endemism and threatened species numbers, numbers of species with other traits of species such as marine, migrant, exotic as well as invasive alien as well as the number of species falling into different conservation status nationally and globally when available. Global conservation status is available for the vertebrate taxa (freshwater fish, amphibians, reptiles, birds and mammals) whereas the national conservation status is considered for plants, odonates and butterflies. Further, summaries are presented for (a) Numbers of species with global significance, and (b) Numbers of species critical for conservation planning.

Globally significant species are defined here as any species that is (i) Globally threatened (for vertebrate groups) and/or Endemic to Sri Lanka and Nationally Threatened (for plants, odonates and butterflies), or (ii) endemic to Sri Lanka, or (iii) a restricted range species or (iv) a transboundary migratory species. Enhanced protection for globally significant biodiversity is a prime target of GEF and hence it is important to know the number of such species within each Trial Landscape.

Species nationally critical for conservation planning on the other hand are with higher national interest, regardless of their global significance, still being significant for prioritization for conservation planning. Critical

Species can be defined as any species that is (i) Critically Endangered or Endangered (ii) Endemic and/or (iii) a restricted range species (IFC, 2012).

Detailed lists of flora and fauna recorded in the Trial Landscapes 1, 2 and 3 of the “Managing Together” landscape is given in Annex 1 (flora) and Annex 2 (fauna).

Flora of the Trial Landscape 1

A total of 212 species of vascular plants were observed in the Trial Landscape 01. This included 163 indigenous species of which 17 are endemic to Sri Lanka. The remaining species are listed as exotics. The plant species recorded also included two nationally Endangered, 10 nationally Vulnerable species and 11 Near Threatened species (see Table 26).

Table 26. Summary of flora observed in the Trial Landscape 01 Malwathu Oya (Conservation Status, PE: Possibly Extinct, CR: Critically Endangered, EN: Endangered, VU: Vulnerable, NT: Near Threatened, DD: Data Deficient)

| HABIT | TOTAL | SPECIES STATUS | | | | National Conservation Status | | | | |
|--------------------|-------|----------------|---------|--------|-----|------------------------------|----|----|----|----|
| | | Indigenous | Endemic | Exotic | IAS | CR | EN | VU | NT | DD |
| Trees | 102 | 73 | 9 | 30 | 1 | 0 | 2 | 6 | 5 | 0 |
| Shrubs | 39 | 30 | 3 | 9 | 2 | 0 | 0 | 1 | 3 | 0 |
| Herbs | 38 | 30 | 1 | 8 | 3 | 0 | 0 | 1 | 1 | 0 |
| Vines and Climbers | 31 | 28 | 4 | 3 | 2 | 0 | 0 | 0 | 2 | 0 |
| Epiphytes | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |

Fauna of the Trial Landscape 1

A total of 76 invertebrate species (from selected invertebrate groups) and 195 vertebrates, including 262 native, eight migrant and four domestic species were observed in the Trial Landscape 01 of Malwathu Oya basin (IUCN, 2018). This included 28 species that are endemic to Sri Lanka. Further, the fauna recorded in the Trial Landscape included four Endangered, nine Vulnerable 16 Near Threatened and one Data deficient species nationally while that also include two globally vulnerable and five globally endangered species (See Table 27).

Table 27. Summary of the fauna observed in the Trial Landscape 01 of the project landscape (Conservation Status, PE: Possibly Extinct, CR: Critically Endangered, EN: Endangered, VU: Vulnerable, NT: Near Threatened, DD: Data Deficient)

| Taxonomic Group | Recorded from Sri Lanka | | | | | National Conservation Status | | | | | Global Conservation Status | | |
|-----------------|-------------------------|---------|--------|---------|--------|------------------------------|----|----|----|----|----------------------------|----|----|
| | Total | Endemic | Marine | Migrant | Exotic | CR | EN | VU | NT | DD | CR | EN | VU |
| Dragonflies | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | N/A | | |
| Butterflies | 55 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | N/A | | |
| Fishes | 23 | 5 | 0 | 0 | 4 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Amphibians | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | |
|-----------------|------------|-----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|
| Reptiles | 30 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 2 | 0 |
| Birds | 107 | 9 | 0 | 8 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 1 | 0 |
| Mammals | 28 | 3 | 0 | 0 | 4 | 0 | 3 | 3 | 3 | 0 | 0 | 2 | 2 |
| Total | 271 | 28 | 0 | 8 | 8 | 0 | 4 | 9 | 16 | 1 | 0 | 5 | 2 |

Globally significant and nationally critical species in Trial Landscape 1

Species that are globally significant and those are nationally critical for conservation within Trial Landscape 1 are tabulated below.

Table 28. Summary of globally significant and critical species in each taxonomic group observed in the Trial Landscape 01 of the project landscape

| Taxonomic Group | Globally Significant Species | Nationally Critical Species |
|-----------------|------------------------------|-----------------------------|
| Butterflies | 4 | 1 |
| Dragonflies | 2 | 2 |
| Fishes | 4 | 4 |
| Amphibians | 2 | 2 |
| Reptiles | 8 | 7 |
| Birds | 17 | 9 |
| Mammals | 10 | 5 |
| Plants | 25 | 17 |
| Total | 72 | 47 |

Flora of the Trial Landscape 2

A total of 158 species of vascular plants were observed in the Trial Landscape 02. This included 128 indigenous species of which six are endemic to Sri Lanka. The remaining 26 species are listed as exotics and three are unknown. The plant species recorded also included one nationally Endangered, six nationally Vulnerable species and nine Near Threatened species (see Table 29)

Table 29. Summary of flora observed in the Trial Landscape 02 Malwathu Oya (Conservation Status, PE: Possibly Extinct, CR: Critically Endangered, EN: Endangered, VU: Vulnerable, NT: Near Threatened, DD: Data Deficient)

| HABIT | TOTAL | SPECIES STATUS | | | | National Conservation Status | | | | |
|--------------------|-------|----------------|---------|--------|-----|------------------------------|----|----|----|----|
| | | Indigenous | Endemic | Exotic | IAS | CR | EN | VU | NT | DD |
| Trees | 65 | 51 | 3 | 14 | 2 | 0 | 1 | 2 | 5 | 0 |
| Shrubs | 28 | 23 | 0 | 4 | 1 | 0 | 0 | 2 | 2 | 0 |
| Herbs | 36 | 27 | 1 | 6 | 3 | 0 | 0 | 1 | 0 | 0 |
| Vines and Climbers | 26 | 24 | 2 | 2 | 1 | 0 | 0 | 0 | 2 | 0 |
| Epiphytes | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

Fauna of the Trial Landscape 2

A total of 39 invertebrate species (from selected invertebrate groups) and 218 vertebrates, including 252 native, 20 migrant and four domestic species were observed in the Trial Landscape 02 of Malwathu Oya basin (IUCN, 2018). This included 29 species that are endemic to Sri Lanka. Further, the fauna recorded in the Trial Landscape included four Critically Endangered, five Endangered, 14 Vulnerable, 17 Near Threatened and one Data deficient species (See Table 30)

Table 30. Summary of the fauna observed in the Trial Landscape 02 of the project landscape (Conservation Status, PE: Possibly Extinct, CR: Critically Endangered, EN: Endangered, VU: Vulnerable, NT: Near Threatened, DD: Data Deficient)

| Taxonomic Group | Recorded from Sri Lanka | | | | | National Conservation Status | | | | | Global Conservation Status | | |
|-----------------|-------------------------|-----------|----------|-----------|----------|------------------------------|----------|------------|-----------|----------|----------------------------|----------|----------|
| | Total | Endemic | Marine | Migrant | Exotic | CR | EN | VU | NT | DD | CR | EN | VU |
| Dragonflies | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | N/A | | |
| Butterflies | 26 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | 1 | 0 | N/A | | |
| Fishes | 30 | 10 | 0 | 0 | 2 | 0 | 1 | 30 | 10 | 0 | 1 | 0 | 0 |
| Amphibians | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Reptiles | 29 | 7 | 0 | 0 | 0 | 0 | 0 | 29 | 7 | 0 | 0 | 0 | 2 |
| Birds | 128 | 8 | 0 | 20 | 0 | 0 | 3 | 128 | 8 | 0 | 0 | 0 | 1 |
| Mammals | 27 | 3 | 0 | 0 | 4 | 0 | 0 | 27 | 3 | 0 | 0 | 3 | 2 |
| Total | 257 | 29 | 0 | 20 | 6 | 0 | 4 | 257 | 29 | 0 | 1 | 3 | 5 |

Globally significant and nationally critical species in Trial Landscape 2

Species that are globally significant and those are nationally critical for conservation within Trial Landscape 2 are tabulated below.

Table 31. Summary of globally significant and critical species in each taxonomic group observed in the Trial Landscape 02 of the project landscape

| Taxonomic Group | Globally Significant Species | Nationally Critical Species |
|-----------------|------------------------------|-----------------------------|
| Butterflies | 5 | 1 |
| Dragonflies | 0 | 0 |
| Fishes | 10 | 10 |
| Amphibians | 0 | 0 |
| Reptiles | 9 | 8 |
| Birds | 29 | 11 |
| Mammals | 7 | 5 |
| Plants | 12 | 7 |
| Total | 72 | 42 |

Flora of the Trial Landscape 3

A total of 57 species of vascular plants were observed in Trial Landscape 03. This included 48 indigenous species of which one is endemic to Sri Lanka. Eight species are listed as exotics. The plant species recorded also included one nationally Endangered, one nationally Vulnerable species seven Near Threatened and one Data deficient species (see Table 32).

Table 32. Summary of flora observed in Trial Landscape 01 Malwathu Oya (Conservation Status, PE: Possibly Extinct, CR: Critically Endangered, EN: Endangered, VU: Vulnerable, NT: Near Threatened, DD: Data Deficient)

| HABIT | TOTAL | SPECIES STATUS | | | | National Conservation Status | | | | |
|--------------------|-------|----------------|---------|--------|-----|------------------------------|----|----|----|----|
| | | Indigenous | Endemic | Exotic | IAS | CR | EN | VU | NT | DD |
| Trees | 20 | 15 | 1 | 5 | 2 | 1 | 0 | 1 | 0 | 20 |
| Shrubs | 13 | 11 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 13 |
| Herbs | 14 | 13 | 0 | 1 | 1 | 0 | 0 | 4 | 1 | 14 |
| Vines and Climbers | 10 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 |
| Epiphytes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Fauna of the Trial Landscape 3

A total of 19 invertebrate species (from selected invertebrate groups) and 143 vertebrates, including 148 native, 41 migrant and three domestic species were observed in Trial Landscape 03 of Malwathu Oya basin (IUCN, 2018). This included three species that are endemic to Sri Lanka. Further, the fauna recorded in the Trial Landscape included five Critically Endangered, three Endangered, eight Vulnerable and three Near Threatened species (See Table 33).

Table 33. Summary of the fauna observed in Trial Landscape 01 of the project landscape (Conservation Status, PE: Possibly Extinct, CR: Critically Endangered, EN: Endangered, VU: Vulnerable, NT: Near Threatened, DD: Data Deficient)

| Taxonomic Group | Recorded from Sri Lanka | | | | | National Conservation Status | | | | | Global Conservation Status | | |
|-----------------|-------------------------|----------|----------|-----------|----------|------------------------------|----------|----------|----------|----------|----------------------------|----------|----------|
| | Total | Endemic | Marine | Migrant | Exotic | CR | EN | VU | NT | DD | CR | EN | VU |
| Dragonflies | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | N/A | | |
| Butterflies | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | N/A | | |
| Fishes | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Amphibians | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reptiles | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| Birds | 108 | 1 | 0 | 41 | 0 | 5 | 0 | 4 | 1 | 0 | 1 | 1 | 0 |
| Mammals | 15 | 2 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 2 |
| Total | 162 | 6 | 4 | 41 | 4 | 5 | 3 | 8 | 3 | 0 | 1 | 3 | 2 |

Globally significant and nationally critical species in Trial Landscape 3

Species that are globally significant and those are nationally critical for conservation within Trial Landscape 1 are tabulated below.

Table 34. Summary of globally significant and critical species in each taxonomic group observed in the Trial Landscape 03 of the project landscape

| Taxonomic Group | Globally Significant Species | Nationally Critical Species |
|-----------------|------------------------------|-----------------------------|
| Butterflies | 2 | 0 |
| Dragonflies | 0 | 0 |
| Fishes | 0 | 0 |
| Amphibians | 0 | 0 |
| Reptiles | 3 | 3 |
| Birds | 39 | 8 |
| Mammals | 5 | 5 |
| Plants | 3 | 2 |
| Total | 52 | 18 |

Invasive Alien Species in all three Trial Landscapes

Table 35 summarizes all the invasive alien species (IAS) of flora and fauna documented through the rapid biodiversity assessment in the three Trial Landscapes. These species were observed to compete for the habitat with the native species in posing a threat to the existence of natives. The list comprises eight species of plants and five species of animals that have been confirmed at least by one or both among the National Priority IAS List of Sri Lanka (BDS & MoMD&E, 2016) and the Global Invasive Species Database (ISSG, 2015). The only species we have included here without been listed in any of the above is the freshwater food fish Rohu (*Labeo rohita*), due to its relevance for our project in which the conservation of *Labeo lankae* is a top priority. Even it was once believed that *Labeo lankae* was driven to extinction by the introduction of *L. rohita* for fisheries purposes. Both the species belong to the same genus and they are very similar in their food habits and habitat requirements. This may cause an unnecessary competition putting the survival of the last remaining populations of *Labeo lankae* at risk.

Table 35. Invasive alien species of flora and fauna recorded from the three Trial Landscapes within the “Managing Together” project landscape

| Family | Scientific name | English name | Sinhala name | Tamil name | Listed in the National Priority IAS list of Sri Lanka | Global invasive species database | Present in Trial Landscape | | |
|-----------------------------|--------------------------------|--|--|----------------------|---|----------------------------------|----------------------------|---|---|
| | | | | | | | 1 | 2 | 3 |
| Invasive alien flora | | | | | | | | | |
| Asteraceae | <i>Sphagneticola trilobata</i> | Trailing daisy, Creeping ox-eye | <i>Udaya kumari, Kaha karabu, Arunadevi</i> | | Yes | Yes | 1 | | |
| Fabaceae | <i>Leucaena leucocephala</i> | Wild tamarind, Ipil | <i>Ipil-Ipil</i> | <i>Nattucavundal</i> | Yes | Yes | 1 | 1 | |
| Fabaceae | <i>Mimosa pigra</i> | Giant sensitive plant, Giant mimosa, Catclaw mimosa | <i>Yoda nidikumba, Balal niya nidikumba, Gas Nidikumba</i> | | Yes | Yes | 1 | | |
| Poaceae | <i>Panicum maximum</i> | Guinea grass | <i>Gini tana / Rata tana, Ginikeeressa</i> | | Yes | Yes | 1 | 1 | |
| Pontederiaceae | <i>Eichhornia crassipes</i> | Water hyacinth | <i>Japan-jabara</i> | | Yes | Yes | 1 | | |
| Verbenaceae | <i>Lantana camara</i> | Common lantana, Pickly lantana, Wild sage | <i>Ganda-pana, Garda-pana, Katu-hinguru, Rata-hinguru, Ton-kinna</i> | <i>Arisimalar</i> | Yes | Yes | 1 | 1 | 1 |
| Salvinaceae | <i>Salvinia molesta</i> | Giant Salvinia ,Kariba weed, African pyle, aquarium watermoss, koi kandy, water velvet, water fern and salvinia. | | Tuni-kodi | Yes | Yes | 1 | 1 | |
| Cactaceae | <i>Opuntia dillenii</i> | Prickly pear / Snake hood fig | <i>Katu-pathok</i> | <i>Kalli</i> | Yes | Yes | | 1 | 1 |
| Asteraceae | <i>Chromolaena odorata</i> | Siam Weed, Devil weed, Common floss flower | <i>Podi singno maran, Lokkannattan</i> | | No | Yes | | | 1 |
| Fabaceae | <i>Prosopis juliflora</i> | Mesquite | <i>Katu-siyambala</i> | | Yes | Yes | | | 1 |
| Invasive alien fauna | | | | | | | | | |
| Cichlidae | <i>Oreochromis niloticus</i> | Tilapia | <i>Tilapia</i> | | No | Yes | 1 | 1 | |
| Cichlidae | <i>Oreochromis mosambicus</i> | Tilapia | <i>Tilapia</i> | | No | Yes | 1 | | |
| Cyprinidae | <i>Labeo rohita</i> | Rohu | <i>Rohu</i> | | No | No | 1 | 1 | |
| Cyprinidae | <i>Ctenopharyngodon idella</i> | Grass carp | | | No | Yes | 1 | | |

Results of the *Labeo lankae* status survey

The map provided in the figure 6 explains the results of the *Labeo lankae* status survey. All localities listed in the Table 2 were visited and an effort was made to find the species or to get information from people in the area on its existence.

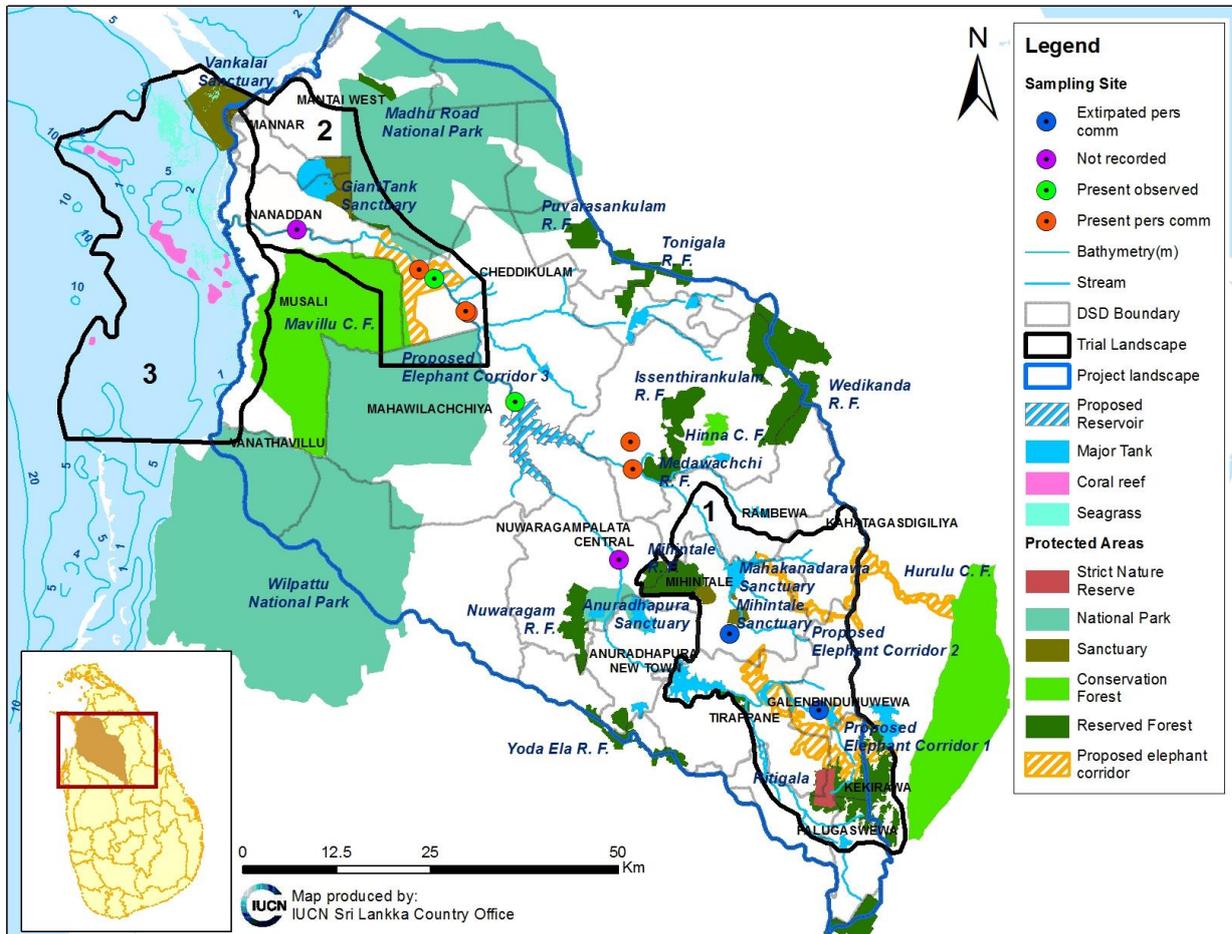


Figure 6. Results of the *Labeo lankae* status survey conducted during the rapid biodiversity assessment of the Malwathu Oya basin

Our preliminary observations suggest that *Labeo lankae* seems to have extirpated from the upper reaches of Malwathu Oya, not resulting in any single confirmation of its presence from historical localities or elsewhere. Elderly people who were questioned on the existence of the species in Trial Landscape 1 responded with the confidence that they have seen the species but not recently. The species could neither be recorded from Malwathu Oya at Glapalama near Mihintale, which was close to the north-western edge of Trial Landscape 1 and from Malwathu Oya in Kompansalintakulum close to the eastern edge of Trial Landscape 3. Further in all the localities in between those two the species was either observed or its presence confirmed by the communities. Hence the preliminary conclusion of its existence in and around Trial Landscape 2 is plausible, and it justifies our area selection including the riverine habitats along Trial Landscape 2, especially for the development and implementation of a *Labeo lankae* conservation plan. Nevertheless, it was unfortunate to say that we've recorded more dead specimens than live ones of the species

due to the illegal fishing practice of poisoning of remaining waterholes during the dry season. This observation urges the need for a conservation plan for *Labeo lankae* with an immediate effect.

Biodiversity of the seascape (major part of the Trial Landscape 3)

The coastal and marine areas of the project is between the Vankalai sanctuary and Kudiramalai on the Wilpattu coast, shown as Trial Landscape 3 in Figure 1. The entire area is situated within the Gulf of Mannar and the coast bordering the gulf. The Gulf of Mannar and the adjacent coast as a whole is a very special area in Sri Lanka. It has forests, rivers, lagoons, salt marshes, tidal flats, mangroves, coral reefs seagrass meadows, islands and beaches. The terrestrial area has Wilpattu National Park which is the largest protect area in Sri Lanka and considered one of the last remaining jungle areas in the dry zone. It also has the largest land mammals including the elephant and the leopard. The largest offshore coral reefs and seagrass meadows are found in the Gulf of Mannar and most of them are within the Trial Landscape (Fig. 2). In addition, extensive mangroves are present in the Puttalam Lagoon and Kalaoya estuary (riverine mangroves) as well as in the delta of the Malwathu-oya (Aruvi-aru). The Gulf of Mannar has the largest marine mammals including the Blue whale and the Sperm whale and several species of dolphins, the dugong and sea turtles. The marine and terrestrial area supports the 'Big five' as advertised by the travel agencies. They are the Elephant, Leopard, Sloth bear, Blue whale and the Sperm whale. The salt water crocodile is sometimes included in the list of major attractions among the 'Big' animals. It is present in the rivers that flow into the Gulf of Mannar including the Malwathu oya.

Although the core area of the project is relatively small, the influence zone of the marine area includes the entire gulf and beyond due to connectivity of species through larval dispersion, migration etc. Human activities taking place beyond the boundary of the project area has a profound impact on the species and their habitats within the Trial Landscape. The major impacts are from fishing and pollution.

Ecosystem diversity of the seascape

The major coastal and marine ecosystems within the Trial Landscape include mangroves, coral reefs and seagrass meadows. Due to the connectivity of species and habitats in the entire marine area has be considered as a whole. The occurrence of the ecosystems in relation to the major villages along the coast is given in Table 15. Coral reefs, and seagrass meadows from the sea scape are shown in Figure 7.

Table 36. Coastal and marine ecosystems in the Trial Landscape

| Ecosystem | Vankalai | Arippu | Silavaturai |
|------------------|--|--|---------------------------------------|
| Mangroves | Mangroves associated with tidal flats and salt marshes present in the Vankalai sanctuary but not in the sea. | Present in the delta of the Malwathu oya | Not present |
| Coral reefs | An offshore patch reef is present. This reef is about 4 km in length and aligned in the NW-SE direction. | Has an extensive offshore patch reef. | Has an extensive offshore patch reef. |

| | | | |
|------------------|--|--|--|
| Seagrass meadows | Present. Extensive areas surrounding the coral reefs and spreading close to shore. | Present. Extensive areas surrounding the coral reefs and spreading close to shore. | Present. Extensive areas surrounding the coral reefs and spreading close to shore. |
|------------------|--|--|--|

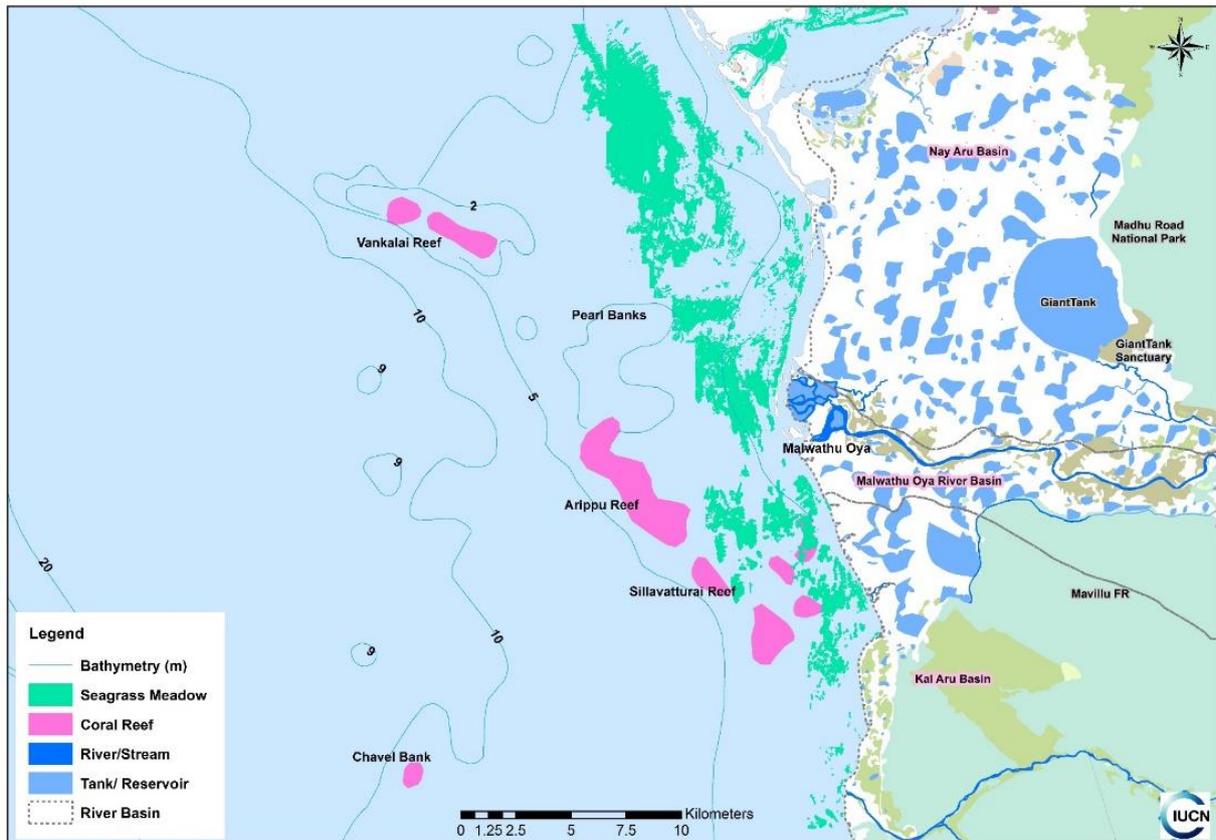


Figure 7. Distribution of seagrass and coral reefs in the Trial Landscape 3 (marine area). Please note that the Pearl Bank and Cheval Bank are not true coral reefs, they are pearl banks as the name of the first.

Species diversity of the seascape

Corals:

One hundred and one (101) species of hard corals have been recorded for the Gulf of Mannar which includes reefs from Vankalai, Arippu, Silavaturai and Bar reef (Table 37). Their IUCN Red List categories are: 53 LC, 30 NT, 9 VU, and 9 NE. The nine vulnerable hard corals recorded from Vankalai, Arippu, Silavaturai and the Bar reef includes *Acropora aculeus*, *A. acuminata*, *A. anthocercis*, *A. hemprichii*, *A. solitaryensis*, *A. verweyi* of the family Acroporidae, *Alveopora verriliana* of family Poritidae, *Euphyllia ancora* of family Euphyllidae and *Galaxea cf astreata* of family Oculinidae.

Table 37. List of hard corals recorded for the Gulf of Mannar.

| | | |
|------------------------------|-----------------------------|-------------------------|
| <i>Acanthastrea echinata</i> | <i>Acropora acuminata</i> | <i>Acropora austera</i> |
| <i>Acropora aculeus</i> | <i>Acropora anthocercis</i> | <i>Acropora branchi</i> |

| |
|--------------------------------------|
| <i>Acropora clathrata</i> |
| <i>Acropora cytherea</i> |
| <i>Acropora danai (abrotanoides)</i> |
| <i>Acropora digitifera</i> |
| <i>Acropora divaricata</i> |
| <i>Acropora gemmifera</i> |
| <i>Acropora glauca</i> |
| <i>Acropora hemprichii</i> |
| <i>Acropora humilis</i> |
| <i>Acropora hyacinthus</i> |
| <i>Acropora lamarcki</i> |
| <i>Acropora latistella</i> |
| <i>Acropora lutkeni</i> |
| <i>Acropora microphthalma</i> |
| <i>Acropora millepora</i> |
| <i>Acropora muricata</i> |
| <i>Acropora natalensis</i> |
| <i>Acropora nobilis</i> |
| <i>Acropora pinguis</i> |
| <i>Acropora pulchra</i> |
| <i>Acropora robusta</i> |
| <i>Acropora rudis</i> |
| <i>Acropora samoensis</i> |
| <i>Acropora secale</i> |
| <i>Acropora selago</i> |
| <i>Acropora seriata</i> |
| <i>Acropora solitaryensis</i> |
| <i>Acropora stoddarti</i> |
| <i>Acropora tenuis</i> |
| <i>Acropora valenciennesi</i> |
| <i>Acropora valida</i> |
| <i>Acropora verweyi</i> |
| <i>Acropora yongei</i> |
| <i>Alveopora verriliana</i> |
| <i>Astreopora gracilis</i> |
| <i>Coscineraea columna</i> |
| <i>Cycloseris costulata</i> |
| <i>Cycloseris cyclolites</i> |
| <i>Cycloseris patelliformis</i> |
| <i>Cyphastrea chalcidicum</i> |
| <i>Diaseris fragilis</i> |
| <i>Diploastrea heliopora</i> |
| <i>Distichopora violacea</i> |

| |
|-------------------------------------|
| <i>Echinophyllia aspera</i> |
| <i>Echinopora lamellosa</i> |
| <i>Euphyllia ancora</i> |
| <i>Euphyllia divisa</i> |
| <i>Euphyllia glabrescens</i> |
| <i>Favia fava</i> |
| <i>Favia pallida</i> |
| <i>Favia speciosa</i> |
| <i>Favites abdita</i> |
| <i>Favites chinensis</i> |
| <i>Favites flexuosa</i> |
| <i>Favites halicora</i> |
| <i>Fungia (Fungia) fungites</i> |
| <i>Fungia (Ctenactis) echinata</i> |
| <i>Fungia (Danafungia) danai</i> |
| <i>Fungia (Pleuractis) scutaria</i> |
| <i>Fungia paumotensis</i> |
| <i>Galaxea cf astreata</i> |
| <i>Galaxea fascicularis</i> |
| <i>Gardineroseris planulata</i> |
| <i>Goniastrea aspera</i> |
| <i>Goniastrea edwardsi</i> |
| <i>Goniastrea pectinata</i> |
| <i>Goniastrea retiformis</i> |
| <i>Goniopora stokesi</i> |
| <i>Hydnophora exesa</i> |
| <i>Leptastrea purpurea</i> |
| <i>Leptoria phrygia</i> |
| <i>Leptoseris explanata</i> |
| <i>Leptoseris mycetoseroides</i> |
| <i>Meruline ampliata</i> |
| <i>Millipora exaesa</i> |
| <i>Montastrea curta</i> |
| <i>Montastrea valenciennesi</i> |
| <i>Montipora aequituberculata</i> |
| <i>Montipora danae</i> |
| <i>Montipora effusa</i> |
| <i>Montipora foliosa</i> |
| <i>Montipora friabilis</i> |
| <i>Montipora hispida</i> |
| <i>Montipora monasteriata</i> |
| <i>Montipora undata</i> |
| <i>Montipora verrucosa</i> |

| |
|------------------------------------|
| <i>Mycedium elephantosus</i> |
| <i>Oulophyllia crispa</i> |
| <i>Pachyseris rugosa</i> |
| <i>Pachyseris speciosa</i> |
| <i>Pavona cf. explanulata</i> |
| <i>Pavona clavus</i> |
| <i>Pavona decussata</i> |
| <i>Pavona maldivensis</i> |
| <i>Pavona minuta</i> |
| <i>Pavona varians</i> |
| <i>Pavona venosa</i> |
| <i>Platygyra daedalea</i> |
| <i>Platygyra lamellina</i> |
| <i>Platygyra pini</i> |
| <i>Platygyra sinensis</i> |
| <i>Plerogyra sinuosa</i> |
| <i>Plesiastrea versipora</i> |
| <i>Pocillopora damicornis</i> |
| <i>Pocillopora eydouxi</i> |
| <i>Pocillopora verrucosa</i> |
| <i>Podabacia crustacea</i> |
| <i>Podabacia lankaensis</i> |
| <i>Polyphyllia talpina</i> |
| <i>Porites (Synaraea) rus</i> |
| <i>Porites annae</i> |
| <i>Porites cylindrica</i> |
| <i>Porites desilveri</i> |
| <i>Porites lobata</i> |
| <i>Porites lutea</i> |
| <i>Porites solida</i> |
| <i>Psammacora contigua</i> |
| <i>Psammacora digitata</i> |
| <i>Pseudosiderastrea tayamai</i> |
| <i>Stylocoeniella guentheri</i> |
| <i>Symphyllia agaricia</i> |
| <i>Symphyllia cf recta</i> |
| <i>Symphyllia cf valenciennesi</i> |
| <i>Symphyllia radians</i> |
| <i>Tubastrea aurea</i> |
| <i>Tubastrea micrantha</i> |
| <i>Turbinaria mesenterina</i> |
| <i>Turbinaria peltata</i> |
| <i>Zoopilus echinatus</i> |

Large invertebrates

There are several species of starfish, molluscs, crabs and spiny lobsters. The Crown of Thorns starfish (*Acanthaster planci*) which is a predator of hard corals is present. Two species of molluscs (*Turbinella pyrum* and *Chicoreus ramosus*) are collected for export. The two species of spiny lobsters *Panulirus versicolor* and *P. ornatus* are present on the coral reefs. Several species of starfish are used in the aquarium trade as well as sea anemones.

Reef fish

About 300 species of reef and reef associated species have been recorded from the Gulf of Mannar. As the distribution of most of these species are widespread they occur throughout the Gulf of Mannar. There are a few species listed below that have not been recorded south of the Kalpitiya Peninsula.

Species that may be restricted to the Gulf of Mannar and the northern waters are *Abudefduf bengalensis*, *Chaetodon octofasciatus* and *Plectorhinchus ceylonensis*.

The Humphead wrasse (*Cheilinus undulatus*) is among the endangered species present throughout the Gulf of Mannar. The adults are found on the offshore sandstone reefs, the juveniles among the shallow coral areas. Although their distribution is widespread their numbers are relatively low with several small groups of adults distributed on the sandstone reefs. Humphead wrasses are not protected in Sri Lanka and they are speared by scuba divers who collect chanks and sea cucumber. In addition, the Whale Shark (*Rhincodon typus* VU), Leopard Shark (*Stegosoma fasciatum* VU), and three species of Sawfish (*Pristis zijsron* CR; *Anoxypritis cuspidatus* EN; and *Pristis microdon* CR) are among the threatened species of marine fish found in the area, while the Green sawfish (*Pristis zijsron*) and Large-tooth sawfish (*Pristis microdon*) are Critically Endangered.

Marine mammals

The Gulf of Mannar is rich in marine mammal diversity. Seventeen species have been recorded. This including six species of Baleen whales, the Sperm whale, Orca and several species of dolphins. In addition, the Dugong is present both in the Gulf of Mannar and Palk Bay due to the presence of extensive seagrass meadows. Only the Indo Pacific Humpback dolphin (*Sousa chinensis*) was recorded until recently where genetic studies revealed that there are two species in the northern Indian Ocean. According to the latest studies the species occurring in the western Indian Ocean which includes Sri Lanka is called the Indian Ocean Humpback dolphin (*Sousa plumbea*). However, the range of the Indo-pacific Humpback dolphin is from the east coast of India to the Indo Pacific. Therefore, both species may be present in Sri Lanka and both species have been included in Table 38. As per the IUCN Red List of Threatened Species there are four endangered species, four vulnerable species, four least concerned and four data deficient.

Table 38 List of marine mammals recorded in the Gulf of Mannar

| Common name | Scientific name | IUCN Red List status |
|-------------------------------|-----------------------------------|----------------------|
| Blue whale | <i>Balaenoptera musculus</i> | EN |
| Fin whale | <i>Balaenoptera physalus</i> | EN |
| Sei whale | <i>Balaenoptera borealis</i> | EN |
| Bryde's whale | <i>Balaenoptera edeni</i> | LC |
| Minke whale | <i>Balaenoptera acutorostrata</i> | LC |
| Humpback whale | <i>Megaptera novaeangliae</i> | LC |
| Sperm whale | <i>Physeter microcephalus</i> | VU |
| Pygmy sperm whale | <i>Kogia breviceps</i> | DD |
| Dwarf sperm whale | <i>Kogia sima</i> | DD |
| Killer whale | <i>Orcinus orca</i> | DD |
| False killer whale | <i>Pseudorca crassidens</i> | DD |
| Melon headed whale | <i>Peponocephala electra</i> | LC |
| Bottlenose dolphin | <i>Tursiops truncatus</i> | LC |
| Indian Ocean humpback dolphin | <i>Sousa plumbea</i> | EN |
| Humpback dolphin | <i>Sousa chinensis</i> | VU |
| Finless porpoise | <i>Neophocaena phocaenoides</i> | VU |
| Dugong | <i>Dugong dugon</i> | VU |

Among the above marine mammals recorded in the Gulf of Mannar, the most important globally threatened species which frequents in and around the Trial Landscape 3 of the “Managing Together” project includes the Sperm Whale (*Physeter macrocephalus* VU) and Blue Whale (*Balaenoptera musculus* EN), the Indian Ocean Humpback Dolphin (*Sousa plumbea* EN), and the Indo-pacific Finless Porpoise (*Neophocaena phocaenoides* VU),

Sea turtles

Five species of sea turtles have been recorded for Sri Lanka. The species that have recorded frequently in the Gulf of Mannar are the Olive ridley turtle (*Lepidochelys olivacea*), Green turtle (*Chelonia mydas*) and the Hawksbill (*Eretmochelys imbricata*). All three species are affected by the use of fishing nets, especially the gill nets used to catch demersal rays and sharks and beach seine nets.

Fishers are aware that all species of sea turtles are protected in Sri Lanka under the Fauna and Flora Protection Ordinance. Therefore, they avoid landing dead sea turtles. But there are reported incidences where sea turtles caught in beach seines being kept alive in fish traps (fish kraals) fixed offshore. It is also common to encounter carcasses of sea turtles on the beach. There are reports of sea turtles nesting along the coast north of Vankalai.

Threats to the Biodiversity in project landscape and the seascape

Following are some of the threats prevailing to the biodiversity on the landscape. These are not given in any order of the severity or the significance, etc. The rapid biodiversity assessment did not allow enough time to quantify prevailing threats.

Poaching

Illegal poaching is a common practice in these areas, which is very difficult to be controlled even with regular patrolling. Use of shotguns and snares are the most common practice. Wild boar, spotted deer, sambar, barking deer are the commonly available bush meat in the area. Nevertheless, even other species such as the leaf monkeys are even hunted opportunistically.

Direct habitat destruction for unplanned resettlements after the war

Unplanned resettlement projects looming in the area after the 30 year armed conflict are a major threat to the ecosystems and biodiversity in the area. This is becoming an issue that needs immediate management especially in the Trial Landscape 2 and 3, where healthy dry and arid mixed-evergreen forest tracts have hap-hazardly been cleared for settlements, without paying proper attention to conservation status of lands.

Chena cultivation becoming permanent and at commercial scale

This is an issue prominent in the Trial Landscape 1, also with a considerable increase in the Trial Landscape 2. The traditional practice of “Chena” for household scale subsistence was a sustainable way of harnessing the productivity of forest lands without permanent damages to the forests. With the increasing population and the demand for food this practice has now become more and more permanent and being done to harvest commercial scale yields, causing the lands to become unproductive.

Unregulated use of agro-chemicals and pesticides

The farming practices have become so dependant on agro-chemicals, that some farmers are using more than three times the recommended dose of some agro-chemicals in expectation of better yields. The huge increase in the use of pesticides have caused the pollinator populations to collapse in certain areas. Agrochemicals are bio-accumulated and biomagnified along food chains harming species in all levels of the food chains, especially the top predators.

Forest/Bush fires

Paddy farmers have the habits of burning the dry grass on their paddy field towards the end of the dry season in expectation of rains. When such fires become uncontrolled vast tracts of forests have got burned up.

Invasive Alien Species

The biodiversity survey has recorded 10 species of invasive alien plants (see Table 35) that are outcompeting their native counterparts.

In addition, all four invasive alien animals we have recorded (see Table 35) are freshwater fish species that re been stocked in the dry zone tanks by the National Aquatic Development Authority. Although they are supposed to regulate the spread of these species they are now commonly found in all river habitats possibly causing problems for the survival of native freshwater fish species.

Once, the introduction of exotic *Labeo rohita* was been suspected to have caused a collapse of critically endangered and endemic *Labeo lankae* populations to near extinction.

Poisoning of waterholes in the dry season for fishing

This is being done using various insecticide chemicals causing complete destruction of aquatic habitats causing this particular harvesting method to be highly unsustainable and illegal. The fishermen quickly leave the waterbodies only collecting the big fish who die and float quickly after the poisoning, however, the poison remains in the waterholes for longer periods causing mass mortalities of fish. During the rapid biodiversity assessment, we were able to record seven dead specimens of *Labeo lankae* from a location in Trial Landscape 2 (near the Thekkama anicut) which are clear victims of poisoning.

Shotgun wounds and “Hakkapatas” damaging the mouth parts of elephants

The wildlife veterinary surgeons report that most of the elephants especially roaming the Trial Landscape 1 and mostly of poor health, due to the gunshot wounds caused by trap guns set for smaller mammals roaming the forests. Furthermore, the very destructive method of poaching wild boar through “Hakkapatas (explosives wrapped with food)” have cause many baby and juvenile elephants to suffer from severe damages to their mouth parts.

Elephants being killed or wounded due to various agriculture related infrastructure

Various farming practices and infrastructure commonly found mainly in the Trial Landscapes 2 and 3 (e.g. Irrigation canals without animal crossing facilities, large farm wells, private electric fences that do not regulate the current pulses properly) are causing problems to free elephant movements.

Elephants getting hit by trains

While this has become an increasingly serious issue in the entire dry zone of the country, the Parayanalayankulam proposed elephant corridor linking Wilpattu and Madu-road national parks has been recognised as a hotspot for train-elephant accident.

Unplanned elephant viewing blooming tourism industry in less popular destinations

It has also been observed that unplanned blooming of the elephant viewing based tourism activities over the fresh grasslands in drawdown areas of tanks along the Err wewa, Manankattiya wewa, Nachchadoova wewa and Kala wewa have caused obstructions to daily behavioural routines of elephants especially during the peak of the dry season.

Threats to the Biodiversity in project seascape

Threats to marine mammals and sea turtles

Marine mammals and sea turtles are threatened due to several types of fishing activities (Table 39).

Table 39. Types of fishing that threaten marine mammals and sea turtles

| Fishing operation | Impact | Remarks |
|--|---|---|
| Gill nets used for catching rays and bottom dwelling sharks | Catches large species, highly damaging as it also traps and kills dugongs. | The most harmful fishing gear for dugongs. But this gear is widespread and difficult to stop. |
| Gill nets | Small marine mammals (dolphins) get entangled | Gill netting is widespread and difficult to stop/control |
| Purse seining | Traps small marine mammals when pursuing small tuna like species such as Indian mackerel (<i>Rastrelliger kanagurta</i>), kawakawa (<i>Euthynnus affinis</i>). | Purse seining is illegal less than 7 NM from the coast. Due to lack of policing purse seining is widespread. It is also coupled with scuba and dynamiting. |
| Blast fishing | Destroys all living organisms. Sometimes Dugongs are also killed using explosives. Dolphins are killed when they get trapped in the purse seines. Dynamite is used to control large schools of fish within the encircled area in order to facilitate the hauling of the net with a large catch. | Blast fishing is widespread in the Gulf of Mannar on the Sri Lankan side. |
| Beach seine | Occasionally small coastal dolphins (Finless porpoise) get trapped in the beach seines. | This is rare. |
| Bottom and mid water mechanized trawling | Traps and kills sea turtles and dugongs | There is illegal bottom trawling by Indian fishermen. In addition, there are bottom trawlers operated by Sri Lankan fishermen. The target is shrimp. The impact on marine mammals is not known in the Gulf of Mannar. |
| Scuba diving | Used for catching sea cucumber, chanks, lobsters, aquarium fish and spearfishing | Most damaging to populations of chanks, other molluscs, reef fish due to spearfishing etc. |

Marine pollution

Main sources of marine pollution are from land-based pollution and from discarded fishing gear. The coast is strewn with PET bottles, discarded fishing gear and domestic non-biodegradable matter. Although much originates from Sri Lanka, there are indications of plastics from foreign sources, especially from India. The latest survey results of the RV Dr. Fridtjof Nansen in 2018 indicate the highest concentration of plastic pollution was in the northwestern coastal waters of Sri Lanka. They are in the secondary category of micro-plastic originating from packing material for industrial applications and fishing gear (Mudugamuwa, 2019).

Occasionally there are tar balls from bilge washing or from emptying ballast water in the Arabian Sea. The tar balls can be seen mainly during the southwest monsoon. During the northeast monsoon wind pushes the surface water away from the Gulf of Mannar coast.

Fishing activities

Fishing is the main economic activity of the people living along the coast. The major fishing types are Gill nets, Bottom-set nets, Beach seines, Purse seines, Crab nets and Fish traps (kraals). Other types of fishing include scuba diving to harvest sea cucumber, spiny lobsters and several species of molluscs. These are for export as well as the collection of marine aquarium fish.

Over harvesting is common and some fishing operations such as purse seines use the services of divers when the nets are used to catch reef (demersal fish) and semi-pelagic species.

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Annex 2: Terms of Reference for long term (20 months or over) positions

(Terms of Reference for short term consultants (see Annex C of the ProDoc) to be developed by Senior Technical Advisor and Project Manager as required during Project implementation)

Terms of Reference for the Project Board

The Project Board (PB) will serve as the project's decision-making body. It will be chaired by the Secretary, Ministry of Mahaweli Development and Environment (MMDE) and will meet at least twice each year (usually in Colombo, but when the opportunity arises, in Mannar or Arunadhapura) to review Project progress, sign off on Project annual work plans, and endorse major project Outputs. The PB is responsible for providing strategic guidance and oversight during Project implementation, ensuring that progress is made towards the Project Objective and Outcomes, and approving any adaptive management measures that become necessary.

The PB's responsibilities include:

- Provide strategic guidance to project implementation;
- Ensure coordination between various donor funded and government funded projects and programmes;
- Ensure coordination with various government agencies and their participation in project activities;
- Approve annual project work plans and budgets proposed by the Project Manager;
- Approve any major changes in project plans or programmes;
- Oversee monitoring, evaluation and reporting in line with GEF requirements;
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
- Negotiate solutions between the project and any parties beyond the scope of the project;
- Ensure that UNDP Social and Environmental Safeguards Policy is applied throughout project implementation; and, address related grievances as necessary.

These terms of reference will be finalized during the Project Inception Workshop.

Upper Malwathu Community-based conservation expert (UMCCE)

Duty Station: Ritigala FVC 48 pm

In close coordination with the Project Manager (PM), the Senior Technical Adviser (STA), the International Landscape Conservation Design Adviser (ILCA), the Landscape Conservation Planner (LCP) and the Learning and Communications Officer (LCO), the UMCCE will oversee, in Trial Landscape 1, the development and implementation of participatory consultation within communities and between communities and local government, the development of village-cluster level land-use plans and technical and material support for livelihood-focused project interventions in natural resource management (Outputs 3.1, 3.2, 3.3, 3.4, 3.5)

- Organize and implement with the LCO a public information and involvement programme in the selected Focal Village Clusters of TL1 so that the general public and community based organizations understand and embrace the aims of the Project (Output 3.1)
- Slowly get to know the local community and its environs and carry out a public consultation to inform people about the landscape design and the FVC land-use plans and answer questions that people have
- Collect opinions regarding people's understanding of the impacts that
 - a) they themselves and b) othershave on biodiversity and ecological services and what impacts they might have in the future both locally and further afield (through pollution or overuse of water for example), including on vegetation, on wild species of plants and animals
- Design, with local stakeholders, Project staff and consultants, and with the input of relevant organizations a process to engage slowly and patiently over the whole project period as a resident, with individuals and organizations in the community and local government officials (Output 3.2)
- Coordinate and oversee the collection of data required for local land-use plans and the development of livelihood-focused interventions (Output 2.3)
- Support the LCP and the ILCA during the landscape design process with particular reference to providing socio-economic and biophysical data for the FVCs
- Carry out a slow and steady consultative land-use planning process, building community confidence, engaging traditionally sidelined groups (such as women and the disabled). For possible approaches see papers such as: Felix G. Bello, Neil Carr & Brent Lovelock (2016) Community participation framework for protected area-based tourism planning, *Tourism Planning & Development*, 13:4, 469-485¹
- Make contact with, and develop links through the PM with, public and private sector partners who are interested in collaborating on livelihood-focused interventions under Output 3.5
- Arrange periodic exchange meetings so that CCEs and members of the FVC teams from different Trial Landscapes can compare progress and conditions

Qualifications and Experience required

- Master's Degree in a relevant field
- At least 10 years work experience in the field of biodiversity conservation, consensus building with communities and community organizations regarding natural resource management.
- A demonstrated ability to take the initiative in difficult situations
- Excellent communication and facilitation skills
- Able to live and work in remote areas

¹ DOI: [10.1080/21568316.2015.1136838](https://doi.org/10.1080/21568316.2015.1136838)

Lower Malwathu Community-based conservation expert (LMCCE)

Duty Station: Madhu/ FVC 48 pm

In close coordination with the Project Manager (PM), the Senior Technical Adviser (STA), the International Landscape Conservation Design Adviser (ILCA), the Landscape Conservation Planner (LCP) and the Learning and Communications Officer (LCO), the UMCCE will oversee, in Trial Landscape 2, the development and implementation of participatory consultation within communities and between communities and local government, the development of village-cluster level land-use plans and technical and material support for livelihood-focused project interventions in natural resource management (Outputs 3.1, 3.2, 3.3, 3.4, 3.5)

- Organize and implement with the LCO a public information and involvement programme in the selected Focal Village Clusters of TL2 so that the general public and community based organizations understand and embrace the aims of the Project (Output 3.1)
- Slowly get to know the local community and its environs and carry out a public consultation to inform people about the landscape design and the FVC land-use plans and answer questions that people have
- Collect opinions regarding people's understanding of the impacts that
 - a) they themselves and b) othershave on biodiversity and ecological services and what impacts they might have in the future both locally and further afield (through pollution or overuse of water for example), including on vegetation, on wild species of plants and animals
- Design, with local stakeholders, Project staff and consultants, and with the input of relevant organizations a process to engage slowly and patiently over the whole project period as a resident, with individuals and organizations in the community and local government officials (Output 3.2)
- Coordinate and oversee the collection of data required for local land-use plans and the development of livelihood-focused interventions (Output 2.3)
- Support the LCP and the ILCA during the landscape design process with particular reference to providing socio-economic and biophysical data for the FVCs
- Carry out a slow and steady consultative land-use planning process, building community confidence, engaging traditionally sidelined groups (such as women and the disabled). For possible approaches see papers such as: Felix G. Bello, Neil Carr & Brent Lovelock (2016) Community participation framework for protected area-based tourism planning, *Tourism Planning & Development*, 13:4, 469-485²
- Make contact with, and develop links through Project Management with, public and private sector partners who are interested in collaborating on livelihood-focused interventions under Output 3.5
- Arrange periodic exchange meetings so that CCEs and members of the FVC teams from different Trial Landscapes can compare progress and conditions

Qualifications and Experience required

- Master's Degree in a relevant field
- At least 10 years work experience in the field of biodiversity conservation, consensus building with communities and community organizations regarding natural resource management.
- A demonstrated ability to take the initiative in difficult situations
- Excellent communication and facilitation skills
- Able to live and work in remote areas

• ² DOI: [10.1080/21568316.2015.1136838](https://doi.org/10.1080/21568316.2015.1136838)

Malwathu Estuary Community-based conservation expert (MECCE)

Duty Station: Arippu FVC 48 pm

In close coordination with the Project Manager (PM), the Senior Technical Adviser (STA), the International Landscape Conservation Design Adviser (ILCA), the Landscape Conservation Planner (LCP) and the Learning and Communications Officer (LCO), the UMCCE will oversee, in Trial Landscape 3, the development and implementation of participatory consultation within communities and between communities and local government, the development of village-cluster level land-use plans and technical and material support for livelihood-focused project interventions in natural resource management (Outputs 3.1, 3.2, 3.3, 3.4, 3.5)

- Organize and implement with the LCO a public information and involvement programme in the selected Focal Village Clusters of TL3 so that the general public and community based organizations understand and embrace the aims of the Project (Output 3.1)
- Slowly get to know the local community and its environs and carry out a public consultation to inform people about the landscape design and the FVC land-use plans and answer questions that people have
- Collect opinions regarding people's understanding of the impacts that
 - a) they themselves and b) othershave on biodiversity and ecological services and what impacts they might have in the future both locally and further afield (through pollution or overuse of water for example), including on vegetation, on wild species of plants and animals
- Design, with local stakeholders, Project staff and consultants, and with the input of relevant organizations a process to engage slowly and patiently over the whole project period as a resident, with individuals and organizations in the community and local government officials (Output 3.2)
- Coordinate and oversee the collection of data required for local land-use plans and the development of livelihood-focused interventions (Output 2.3)
- Support the LCP and the ILCA during the landscape design process with particular reference to providing socioeconomic and biophysical data for the FVCs
- Carry out a slow and steady consultative land-use planning process, building community confidence, engaging traditionally sidelined groups (such as women and the disabled). For possible approaches see papers such as: Felix G. Bello, Neil Carr & Brent Lovelock (2016) Community participation framework for protected area-based tourism planning, *Tourism Planning & Development*, 13:4, 469-485³
- Make contact with, and develop links through Project Management with, public and private sector partners who are interested in collaborating on livelihood-focused interventions under Output 3.5
- Arrange periodic exchange meetings so that CCEs and members of the FVC teams from different Trial Landscapes can compare progress and conditions

Qualifications and Experience required

- Master's Degree in a relevant field
- At least 10 years work experience in the field of biodiversity conservation, consensus building with communities and community organizations regarding natural resource management.
- A demonstrated ability to take the initiative in difficult situations
- Excellent communication and facilitation skills
- Able to live and work in remote areas

³ DOI: [10.1080/21568316.2015.1136838](https://doi.org/10.1080/21568316.2015.1136838)

International Landscape Conservation Advisor (ILCA)

Duty Station: Mannar District, with travel to all three Trial Landscapes

Duration: 2 months

In close coordination with the Project Manager (PM), the Senior Technical Adviser (STA) and the Landscape Conservation Planner (LCP), will provide international perspective, strategic guidance and technical inputs to the implementation of activities under Outputs 2.1, 2.2, 2.3, 2.4, 2.5.

Learning and Communications Officer (48pm)

Duty Station: Project Office in Mannar, with travel to Colombo, Arunadhapura, and Trial Landscapes as required

Background

The Learning and Communications Officer (LCO) will be responsible for all information and involvement programmes under the Project, in particular the design and delivery of Outputs 2.1, 3.1, 4.3, 4.4 and 4.5, and will liaise with all Project staff and consultants, and with partners (projects and programmes) to deliver Output 1.3

Duties and responsibilities

- Develop a project communications strategy and involvement plan coordinated across all four Outcomes, incorporate it with the annual work plans and update it annually in consultation with project stakeholders; coordinate its implementation
- Liaise with the Implementing partner, the Project Board, relevant government agencies, all other project partners, including donor organisations and NGOs for effective coordination of project information dissemination, streamlining resources and identifying potential synergies.
- Coordinate the implementation of knowledge management outputs of the project;
- Coordinate and oversee the implementation of public information and involvement activities across all project components
- Take the lead in designing and initiating Project interventions to involve and engage youth and other social sub-groups in Project activities and stimulate them to spread important messages themselves
- Facilitate the design and maintenance of the project website/webpages and ensure it is up-to-date and dynamic;
- Facilitate learning and sharing of knowledge and experiences relevant to the project;

Qualifications and Experience

- A Bachelor's degree, preferably in the field of community development or natural resource / environmental management;
- A communications qualification
- At least three years of work experience in developing and implementing communications strategies for organizations or projects, ideally involving international donors
- Strong professional working capacity to use information and communications technology, specifically including website design and desk-top publishing software
- Understanding of biodiversity conservation, sustainable livelihoods and associated issues
- Very good inter-personal skills
- Excellent language skills (writing, speaking and reading) in English and Sinhala, and at least a working knowledge of Tamil would be a great asset

Annex AB: Monitoring Plan:

This Monitoring Plan and the M&E Plan and Budget in Section VI of this project document will both guide monitoring and evaluation at the project level for the duration of project implementation.

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|---|---|---|--|--|--|-----------|------------------------------------|--|---|
| | | Mid term | End of the project | | | | | | |
| <p>Objective: To strengthen protection of globally significant biodiversity through mainstreaming of conservation and sustainable practices into land use planning and sectoral decision making in forestry, agriculture and tourism sectors</p> | <p>Indicator 1 Area of land and marine habitat (protected and non-protected) administered under a landscape conservation design that mainstreams biodiversity conservation into natural resource management (hectares)</p> | <p>Land 80,000 (TL1 44,000 + TL2 27,000 + TL3 9,000) Marine (TL3) 20,000 Protected and non-protected – TBD (data will be available by end of 2020)</p> | <p>Land 155,000 ha (TL1 87,000 + TL2 53,000 + TL3 15,000) Marine (TL3) 55,000 Protected and non-protected - TBD</p> | <p>Ha of land space coming under protection according to the wildlife act fulfill requirements of wildlife species, human via biodiversity mainstreaming for protected area and buffer areas (non protected) which is administered under the landscape conservation design and management.</p> | <p>Secondary - DSD and District Coordinating committee Meeting Minutes Draft and Final Strategic Design from authorities. Government Memos</p> | Annually | National Project Coordinator, UNDP | Valid legal notice (eg. Gazette, Cabinet Memo etc.) End of the project declared the area protected by either single or multiple government mandated agency/ies | <p>Risk: Political will, both at national and sub-national levels is insufficient to drive the landscape approach forward Assumption: Ministry of Environment and Wildlife Resources builds the necessary support for the project's marine and terrestrial work in the three Trial Landscapes by the time of project inception.</p> |

¹ Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|------------|---|---|---|---|--|-----------|------------------------------------|--|--|
| | | Mid term | End of the project | | | | | | |
| | <p>Indicator 2</p> <p>The number of people, disaggregated by gender, that have benefitted monetarily, from project-induced changes in livelihoods.</p> | <p>Male 500</p> <p>Female 500</p> | <p>Male 1,600</p> <p>Female 1,600</p> | <p>People benefited by livelihood projects which compliments biodiversity mainstreaming, including gender segregation, this will incorporate with the all level of integrated planning such as national/provincial level to three trial landscapes level.</p> | <p>Data sources:</p> <p>Primary - The beneficiaries will be measured through Focus Group Discussions and Sample Surveys</p> <p>Secondary – Project distribution documents, and resource profiles.</p> | Annually | National Project Coordinator, UNDP | <p>Resource profiles from EDOs and GS, consolidated report on Livelihood. Bi -annual progress review on gender action plan</p> | <p>Risk:</p> <p>Data gaps exists at field level including variations between GS and EDOs.</p> <p>Assumption:</p> <p>Data will be made available through external resource profiles.</p> |
| | <p>Indicator 3</p> <p>Area of tropical dry forest and mangrove in the three Trial Landscapes restored and rehabilitated (improved) under a landscape conservation design (hectares</p> <p>(UNDP reference-Contributes to IRRF indicator 1.4.1.2 C Number of shared water</p> | <p>6,000</p> <p>Tropical Dry Forest:</p> <p>TL1 2,500</p> <p>TL2 3,000</p> <p>TL 3 500</p> <p>Mangrove TL3 20</p> | <p>21,000</p> <p>Tropical Dry Forest:</p> <p>TL1 8,950</p> <p>TL2 8.950</p> <p>TL 3 3,000</p> <p>Mangrove TL3 100</p> | <p>Area of dry forest and mangrove patches which is rehabilitated, and area of deforestation landscape reforested which is also included in the forest dept’s annual restoration plan covering the three trial landscapes.</p> | <p>Secondary - Annual reports of Forest Department & Wildlife</p> <p>Primary - Surveys</p> | Annually | National Project Coordinator, UNDP | <p>Annual reports of Forest Department & Wildlife. Survey documents</p> | <p>Risk:</p> <p>Political will, both at national and sub-national levels is insufficient to drive the landscape approach forward</p> <p>Assumption:</p> <p>Ministry of Environment and Wildlife Resources builds the</p> |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|--|---|------------------------------------|------------------------------------|--|---|-----------|------------------------------------|---|--|
| | | Mid term | End of the project | | | | | | |
| | ecosystems – fresh or marine-under cooperative management | | | | | | | | necessary support |
| Outcome 01 An enabling environment to mainstream integrated approaches into natural resource management in production sectors and landscapes | Indicator 4 Number of sectoral and vocational training institutions that have adopted modules on mainstreaming of biodiversity into natural resource management, tourism and other economic development | 4 | 9 | Training modules in relation to biodiversity conservation to be adapted by vocational training institutes coming under wildlife, and government authorities to enhance capacity on biodiversity mainstreaming and natural resource management, tourism and other economic development aspects. | Secondary - Copies of the curricula of the training institutions | Annually | National Project Coordinator, UNDP | Agreements, emails, and other written documents | Risk: Institutional constraints in administration leads to slow uptake of the modules even though there is clear intention to include them in curricula Assumption: Institutions collaborate with the project |
| | Indicator 5 Capacity of institutions as measured by the UNDP's Capacity Development Scorecard | District 22/45 Divisional 17/45 | District 30/45 Divisional 30/45 | Capacity of institutions defined on the UNDP capacity scorecard. [UNDP capacity development scorecard for Anuradhapura and Mannar Districts (Annex Z2)] | Communication with the relevant institutions and application of the Scorecard modified to deal with the aspects relevant to mainstreaming | Annually | National Project Coordinator, UNDP | UNDP Scorecard data analysis | Risk: Some of the aspects of the Scorecard not attributable to the project (could modify the Scorecard at Inception to tackle this) |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|--|---|----------|--------------------|---|---|-----------|------------------------------------|---|---|
| | | Mid term | End of the project | | | | | | |
| | | | | | | | | | Assumption: Institutions collaborate with project |
| Outcome 2: Natural resource management, tourism and land use are guided by a strategic design for biodiversity conservation and sustainable livelihoods across multiple jurisdictions in three Trial Landscapes in the Northern and North Central Provinces. | Indicator 6 Area of High Conservation Value Forest that is under improved management to benefit biodiversity under landscape conservation designs in the three Trial Landscapes (hectares) (equivalent to GEF Core Indicator 4.1 but excluding the 1,219 ha of Forest Plantation) | 0 | 18,824 ha | Ha of high conservation value forest which is identified by Forest dept, and dept wildlife conservation Target coverage hectares under First proposed Elephant Corridor in TL1 Second proposed Elephant Corridor in TL1 Areas expected to match ESA criteria in TL1 Forest plantations in TL1 Proposed Elephant Corridor in TL2 Areas expected to match ESA criteria in TL2 Areas expected to match ESA criteria in TL3 | Source documents approved including decisions verified at Provincial Government level. | Annually | National Project Coordinator, UNDP | Multiple sources to verify such as Approved Management Plans, Gazzeted areas, individual reports generated by the project | Risk: Decisions may not be carried through in practice, but this indicator focuses on securing protection of some kind on paper Assumption: Provincial government supports the decisions made during the landscape conservation design work at the Trial Landscapes/District level |
| | Indicator 7 Annual percentage of Minor and Major Permit applications in which | TBD | TBD | This indicator needs to be decided at the inception workshop including its definition. | Examination of applications and judgements/ responses. See: http://www.coastal.gov.lk/downloads/pdf/Permit%20Guideline.pdf and http://cmsdata.iucn.org/do | Annually | National Project Coordinator, UNDP | | Risk: Ambiguity in the documentation Assumptions: |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|------------|--|----------|--------------------|--|--|-----------|------------------------------------|---|---|
| | | Mid term | End of the project | | | | | | |
| | biodiversity impact criteria used in decisions by Coast Conservation Department in Trial Landscape 3 | | | | wnloads/proceedings_of_the_workshop_on_ecological_considerations_in_coastal_development.pdf (page 58) | | | | Access to all required documentation |
| | <p>Indicator 8</p> <p>Mean score (+/- SD) on a standard environmental/biodiversity impact assessment score card modified for the project, of tourism operations (a) marine-based (b) land-based in the three Trial Landscapes</p> | TBD | TBD | Mean score on a standard environmental biodiversity impact for the three landscapes covering land and marine biodiversity calculated according to the Biodiversity Assessment Calculator | Scorecard completed by independent consultant https://www.lmbc.nsw.gov.au/bamcalc | Annually | National Project Coordinator, UNDP | Environmental/biodiversity impact assessment score sheet and analysis document. | <p>Risk: Unexpected difficulties on the application of the scorecard</p> <p>Assumptions: (i) Good cooperation from local communities in answering questions and providing information. (ii) Adequate time assigned for verification</p> |
| | <p>Indicator 9</p> <p>Estimate of the annual amount of carbon (tCO₂e) sequestered/emissions avoided over the twenty years</p> | 889058 | 889058 | Carbon sequestration for agriculture, calculated for estimated years for a landscape-scale greenhouse gas (GHG) assessment of activities in agriculture and forestry. It is based on a technical | http://jrd.t-t-web.com/ | Annually | National Project Coordinator, UNDP | Recalculation with updated information according to the approach in Annex B | <p>Risk: Inherent uncertainties about future events</p> <p>Assumption: Targets based on the assumption</p> |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|--|---|----------|--------------------|---|---|-----------|------------------------------------|---|--|
| | | Mid term | End of the project | | | | | | |
| | following the project's inception taking into account progress on the development, adoption, and implementation of the strategic designs at the heart of the project. | | | report published by FAO which includes appendices with all resource material and descriptions of the individual calculators. | | | | | that the strategic design is adopted (Baseline and Mid-term estimates) and followed (End of Project estimate). Good cooperation with communities and local government, and thorough marine and terrestrial surveys and mapping/satellite imagery analysis |
| Outcome 3 Biodiversity conservation priorities shape sustainable livelihoods in natural resource management and tourism in six Focal Village Clusters in | Indicator 10 Area of land in production systems under sustainable land management compatible with biodiversity conservation (hectares) | 15000 ha | 50406 ha | Following extents of land area will be benefited from the sustainable land use practices compatible with biodiversity conservations # no of hectares Sustainable Forest Management, GAP (good agricultural practices) and | The reports generated by Department of Agriculture, Forest Department or combine physical delivery report authorized by integrated agency coordination and administration committee to be established or supported by the project scorecard . | Annually | National Project Coordinator, UNDP | Combined delivery report from Forest Dept and Agriculture annex Z | Risk: Unexpected difficulties on the application of the scorecard Assumption: (i) Good cooperation from local |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|---|---|-----------------------------|-----------------------------|---|--|-----------|------------------------------------|-----------------------|---|
| | | Mid term | End of the project | | | | | | |
| three Trial Landscapes in the Northern and North Central Provinces. | | | | <p>nature-friendly tourism, in TL1</p> <p>Sustainable Forest Management, GAP (good agricultural practices) and nature-friendly tourism, in TL2</p> <p>Sustainable Forest Management, GAP (good agricultural practices) and nature-friendly tourism, in TL3</p> <p>Reducing soil erosion, minimize landslides, land degradation neutrality. maintaining land productivity. This is tested on a sample considering the hectare patch as the base.</p> | <p>See Annex Z and Bucket et al. 2006</p> <p>https://www.researchgate.net/publication/237228931_UNDERSTANDING_ECOAGRICULTURE_A_FRAMEWORK_FOR_MEASURING_LANDSCAPE_PERFORMANCE)</p> | | | | <p>communities in answering questions and providing information.</p> <p>(ii) Adequate time assigned for verification</p> |
| | Indicator 11 Number of new instances each year of major coral damage along a 1km reef transect in Trial Landscape 3 | Decrease on baseline by 10% | Decrease on baseline by 30% | This is to be defined at the inception workshop | <p>Standard fixed transect survey</p> <p>Measurement cross check of data between past report incidence vs current.</p> | Annually | National Project Coordinator, UNDP | | <p>Risk: The standard fixed transect is left untouched simply to achieve a good score on the indicator</p> <p>Assumption: The</p> |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|------------|---|---|--|--|---|-----------|------------------------------------|---|---|
| | | Mid term | End of the project | | | | | | |
| | | | | | | | | | assessment will be done by an independent diving team without broadcasting the links to the indicator |
| | Indicator 12 Percentage of interviewees disaggregated by gender in Focal Villages who say that livelihoods have been enhanced as a result of mainstreaming biodiversity into land-use plans | 20% (men) 20% (women) | 50% (men) 50% (women) | This link to indicator 1. Indicator 11 will focus to three project landscape while indicator 1 covers broader impacts generated for the betterment of Gender and Social Inclusiveness even beyond the three trial landscapes which also includes that beneficiaries are at profit from implementing biodiversity friendly livelihoods. | Interviews with sound sampling protocols Focus group discussions and surveys to be conducted among the CBOs and divisional stakeholders who are work in the three trial landscapes | | National Project Coordinator, UNDP | <i>Survey documents from KIIs and FGDS</i> | Risk: Sampling problems make comparisons invalid Assumption: Well-designed polling. Honest answers from interviewees |
| | Indicator 13 Percentage of key government and community organizations that publicly endorse and commit to each of the six village-cluster land-use plans | Plan 1: 30% Plan 2: 30% Plan 3: 30% Plan 4: 30% Plan 5: 30% | Plan 1: 60% Plan 2: 60% Plan 3: 60% Plan 4: 60% Plan 5: 60% Plan 6: 60% | six village cluster plan - public and civil societies who supports the endorsement of cluster village plans (GS, Samurdhi, EDO, CBOs, Forest Dept, etc). | Perception surveys | Annually | National Project Coordinator, UNDP | Minutes of meetings, publications and official documents issued | Risk: Sampling problems invalidate the results Assumptions: (i) Expertly designed protocols (ii) Good collaboration |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|--|--|--|---|---|--|-----------|------------------------------------|---|--|
| | | Mid term | End of the project | | | | | | |
| | | Plan 6: 30% | | | | | | | from respondents for interviews and honest replies |
| | Indicator 14 Policy, community readiness for sustainable tourism in the Focal Village Clusters measured by Scorecard in Annex Y | Increase of 15% on baseline score out of 205 | Increase of 35% on baseline score out of 205 | Following key criteria to be measured RECOGNIZED STEWARDSHIP RIGHTS- right to use / own and access certain environmental asset / service OPPORTUNITY FOR POLICY REFORM NATURAL RESOURCE MANAGEMENT | Tourism Destination List, Scorecard assessed for each tourism destination site | Annually | National Project Coordinator, UNDP | Scorecard completed by independent consultant | Risk: Unexpected difficulties in the application of the scorecard Assumptions: (i) Good cooperation from interlocutors in answering questions and providing information. (ii) Adequate time assigned for verification |
| Outcome 4 Monitoring and evaluation, and dissemination of knowledge of project methods and results contributes to wider application of landscape | Indicator 15 Number of (a) villages and (b) DSDs in which independent monitoring of project impacts is taking place according to | To be determined by Inception based on numbers of villages in Focal Village Clusters | To be determined by Inception, based on numbers of villages in Focal Village Clusters | Number of villages and DSDs in which independent monitoring of project impacts is taking place according to sound protocols | KII and demonstrations from those doing monitoring | Annually | National Project Coordinator, UNDP | To be determined by Inception | Risk: Monitoring systems not considered at structural level. Assumption: having proper guidance and |

| Monitoring | Indicators | Targets | | Description of indicators and targets | Data source/Collection Methods ¹ | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
|---|--|----------|--------------------|--|---|-----------|------------------------------------|---|--|
| | | Mid term | End of the project | | | | | | |
| approach to mainstreaming of biodiversity | sound protocols | | | | | | | | follow-up in place which leads to assurance of monitoring systems are adhered. |
| | Indicator 16 Number of substantial knowledge products that reflect best practices and lessons learned including project results and sustainability strategy. | 22 | 42 | Availability of lessons learnt and best practices, which is captured through a dedicated knowledge portal for biodiversity conservation that enable open access to knowledge products initiated with the support of the project. Total # of lessons drawn from knowledge products. | Measures of website traffic, search results on project name, social media reach and engagement. Lists of grey and published literature | Annually | National Project Coordinator, UNDP | Link page of the web of the Government Ministry mandated for the environmental conservation | Risk: Ambiguous internet metrics Assumption: Use of state of the art measures |