

Background

Why prepare a Sinharaja Forest Range Landscape Management Plan?

The Sinharaja Forest Range Landscape Management Plan (SFR-LMP) is a 10 year action plan (2022-2032) prepared by the World Bank funded Ecosystem Conservation and Management Project (ESCAMP). It aims to demonstrate pilot scale integrated landscape level management planning for joint decision making to simultaneously enable more effective conservation of Sri Lanka's unique biological diversity in the lowland wet zone, promote sustainable socio-economic development and enhance well-being of people. It takes note of the varied biotic, abiotic and socio-economic aspects of the landscape, and addresses varied issues such as forest loss, fragmentation and degradation; threats to biological diversity; imbalances in soil, hydrology and climate that leads to rampant soil erosion and degradation; unplanned establishment of human settlements and urban expansion; poorly monitored anthropogenic activities such as mining that degrade soil and water; human-wildlife conflict and Invasive Alien Species (IAS); declining agricultural productivity, and exacerbation of floods, landslides and drought. The challenges to address these issues are explored, chief among which is the multiplicity of stakeholders that work in silos with poor inter-agency coordination which has led to duplication of activities and conflict of interest; wasted funds and effort, and loss of positive synergy. The SFR-LMP identifies cross-cutting support from research, education and communication, and environmental valuation, and presents opportunities for enhanced nature-based tourism that builds on the Biosphere Reserve and World Heritage Brand .

Based on these findings, the SFR-LMP provides a detailed action plan to overcome challenges through integrated landscape level planning and management. The SFR-LMP preparatory process which spanned a period of two years, was challenged by limitations imposed by Covid-19, but has contrived to benefit from consultations with a wide range of stakeholders to implement the Plan, which includes communities, the private sector, state agencies, and subject specialists. It has also drawn on lessons learnt through preparation of the Hurulu-Kawdulla- Kanthale (HKK) Landscape Management Plan by ESCAMP in 2018.

The relevance of landscape management in the SFRL

Landscapes are environmental mosaics with an aggregation of many different natural or man-made landforms and ecosystems that integrate with each other and contain associated fauna, flora and people.^{1,2,3} They are dynamic entities that change with time, making their management, maintenance, and preservation of ecosystem integrity very challenging in the long-term.¹ Due to their heterogenous nature, landscape management is complex, compounded by the multiplicity of land uses, stakeholders, and environmental problems, fueled by varied drivers. Landscape level coordinated management in the SFRL that gives consideration to environmental, social and economic aspects, and involvement of all major stakeholders, will help ensure holistic conservation of its unique biological features and ecological balance while maintaining economic stability and wellbeing of the local people.

¹ Tuner, M G (1999). landscape ecology: Effect of Pattern on Process *Annu. Rev. Ecol. Syst.* 1989. 20:171- 97.

² Çelik, F (2013). Ecological Landscape Design. Intech. <http://dx.doi.org/10.5772/55760>.

³ Loehle, C., MacCracken, J.G., Runde, D., and Hicks, L (2002) *Forest management at landscape scope Solving the Problems* Journal of Forestry pp 25-33

A snapshot of the Sinharaja Forest Range Landscape (SFRL)

The SFRL covers 213,170 ha, and straddles the Districts of Kalutara, Galle, Matara and Ratnapura. It includes 16 Divisional Secretariat Divisions (DSD) wholly or partly, and 395 *Grama Niladhari* Divisions. The world recognized Sinharaja Biosphere Reserve (SBR) and the Sinharaja World Heritage with a unique biodiversity lie at the very centre of the SFRL.

The landscape grades from sea level to around 1300 m, amidst flat, undulating, hilly and rolling terrain to deeply dissected mountain massifs. Much of the landscape comprises agricultural lands, forests, and rural home gardens within human settlements, as well as some expanding urban nodes. The latter are clustered near main roads, but home gardens are more dispersed in other areas of the landscape. Around 697,291 people live in the SFRL, mostly dependent on agriculture, but sand and gem mining are also important economic activities. The main crops in the landscape are tea, rubber and paddy which are mainly rainfed. Other significant crops include coconut, cinnamon, pepper, and oil palm.

Most forests identified in this landscape are lowland rainforest, which grade into sub-montane forest in the more hilly eastern areas. These forests are the very heartland of Sri Lanka's world renowned biological diversity and are replete with a rich biodiversity and exceptional endemism among both fauna and flora. Many of these forests are, however, now severely fragmented and degraded over time, but continue to play a vital role in conserving the nation's biological diversity and controlling floods and landslides that affect a large segment of people in the SFRL. Forests also provide water to more than 60% of households in the SFRL, and this comprises the most important forest use in the landscape. The SFRL also holds hitherto vast untapped potential for expansion of nature-based tourism and displays a high environmental value for national economic development.

Administrative areas in the Sinharaja Forest Range Landscape			
District	Divisional Secretariat	Forest Ranges	Divisional Forest offices
Kalutara	Bulathsinghala	Ingiriya	Kalutara
	Agalawatte	Agalawatte	
	Palindanuwara	Mathugama	
	Walallawita	Mathugama	
Ratnapura	Ayagama	Kalawana	Ratnapura
	Nivithigala	Ratnapura	
	Godakawela	Rakwana	
	Kahawatta	Rakwana	
Galle	Kolonna	Embilipitiya	Galle
	Neluwa	Neluwa	
Matara	Thawalama	Thawalama	Matara
	Kotapola	Deniyaya	
	Pitabeddara	Deniyaya	

Vision, Goals and Objectives of the SFR-LMP

Vision

The unique features of the Sinharaja Forest Range Landscape are conserved for posterity amidst enhanced sustainable economic development and human wellbeing.

Goal

Existing “Development Driven” versus “Conservation Driven” land use conflicts are eliminated in the SFRL through the landscape management approach which simultaneously enables biodiversity conservation, sustainable economic development and enhanced human wellbeing,

Overall Objective

Preparation of the Sinharaja Forest Range Landscape Management Plan to eliminate land use conflicts for development and conservation through a proactive and adaptive landscape management approach, with the required coordination and appropriate administrative and institutionalized setting, that permits biodiversity conservation and preservation of ecosystem integrity, whilst promoting sustainable economic development and enhanced human wellbeing, for maximum local, regional and national socio-economic benefits in the future.

SFRL site selection and boundary definition

The Sinharaja Forest Range Landscape (SFRL) was identified as the smallest land unit that could satisfy several criteria based on sound ecological, administrative and socio-economic factors. Accordingly, special attention has been given to:

- Inclusion of forests considered nationally important by way of biodiversity and hydrology by the National Conservation Review (NCR), which includes the Sinharaja, Walankanda and Haycock forest complexes identified by the NCR.
- Selection of an administrative boundary that encompasses the Grama Niladhari divisions with the above forests while meeting the selection criteria above.
- Inclusion of a mosaic of important landscape elements of ecological and socio-economic importance, nationally and locally, such as parts of five major river basins and smallholder agricultural holdings and large crop plantations that are characteristic of this region.
- Meeting the policy directives of Vistas of Prosperity and Splendour”: A Sustainable future.

Selection Criteria

- A rich biodiversity with excellent representation of Sri Lanka's valuable lowland rainforests
- Protected Areas (NHWA, Conservation Forests and Forest Reserves) and plantation forests
- Presence of the iconic Sinharaja World Heritage Site and the Sinharaja Biosphere which are internationally recognised Protected Areas within the UNESCO list of World Heritage Sites and the World Network of Biosphere Reserves.
- A wide variety of natural and modified ecosystem types important to capture a full complement of wild and cultivated biodiversity.
- Physical features such as topography, geology, hydrology, etc. representative of the Sinharaja forest Range.
- Multiple land uses important for local and national socio-economic development
- Environmentally sensitive areas affected by high population densities, poor land use practices, etc.
- Areas with high pressure on the natural environment from development activities – such as mining, urbanisation, human settlements, agriculture, transport infrastructure, threats from development, etc.
- Fragmented, degraded and patchy mosaic of landscape elements that need restoration.
- Areas for establishment of forest/wildlife corridors and other linkages across modified lands
- Forest complexes and individual forests identified as vital to conserve biodiversity and hydrology at the local and national level by the National Conservation Review (NCR) ^{4,5}
- Practicality of size and administrative framework for pilot scale landscape planning

Meeting policy directions of “Vistas of Prosperity and Splendour”: A Sustainable future

Environmental Policy (policy directive of the President). This takes into account the importance of managing land to be of benefit for the people by maximizing gains while reducing negative impacts on the environment. It underscores the protection, conservation and rehabilitation of biodiversity, the need to maintain a forest cover of 30% of the land area of the island and the conservation of and rehabilitation of degraded ecosystem. Importantly, the policy accepts that protection of biodiversity does not only mean conservation, as it is also a way to improve the national economy. As such, that it will be incorporated into tourism, education and cultural events in a planned and systematic manner in order to boost the economy.

Source: Presidential policy directive

Methodology for preparation of the SFR-LMP

The SFR-LMP has been developed by TEAMS Consultants for ESCAMP based on specific Terms of Reference (**Appendix A**). It has been prepared in close consultation with the Forest Department, and representatives of communities, private sector, and other state agencies that are main stakeholders. The preparatory process involved deskwork, field visits, and a widely consultative processes ranging from individual discussions (telephone and face to face) and interviews, workshops for officials in the Ratnapura, Kalutara, Galle and Matara districts, and a SWOT and stakeholder analysis. Several small group meetings with have been held with relevant agencies and subject specialists to vet the different sections of the SFR-LMP, culminating in sharing the final document with a wider stakeholder group. Details of methodology used for preparing the SFR-LMP is in **Annex A**, which includes the results of the SWOT and detailed stakeholder analysis.

What the SFR-LMP provides

This document promotes a proactive adaptive management approach, with the required coordination and appropriate administrative and institutionalized setting, to maximize local, regional and national benefits of balancing “development actions” with conservation requirements.

The SFR-LMP comprises 4 Parts:

Part I: Introduction to the Sinharaja Forest Range Landscape, under 14 sections:

- 1 Land use features and administrative framework
- 2 Climate (*includes climate change effects*)
- 3 Landscape topography and geology
- 4 Soils
- 5 Hydrology
- 6 Forests
- 7 Biodiversity and ecosystem services
- 8 Human settlements, urban areas and infrastructure
- 9 People and livelihoods
- 10 Agriculture
- 11 Use of mineral resources
- 12 Potential for recreation and tourism
- 13 Susceptibility to natural hazards and disasters (*floods, landslides and droughts*)
- 14 Incorporating environmental values for sustainable development

Part II: Addresses issues, challenges and justification of action with an action plan to address recommended actions under 14 themes and 51 strategic objectives under them.

No	Strategic Themes	SDGs
ST 1	Strengthened management of natural forests in the SFRL for biodiversity conservation, climate change mitigation and enhanced ecosystem services	15
ST 2	Strengthened sustainable management of forest plantations in the SFRL	15
ST 3	Strengthened capacity in FD offices of the SFRL for conservation of forest biodiversity and ecosystem services	15
ST 4	Reduced threats to forests in the SFRL through enhanced law enforcement	15
ST 5	Improved tree cover in non-forested lands (<i>home gardens, urban centers, and private lands</i>) within ecological networks of the SFRL	8,15,12
ST 6	Human-wildlife conflict in the SFRL minimized	15,
ST 7	Species and genetic diversity of wild species and crops in the SFRL conserved through varied approaches	14,15
ST 8	Enhanced landuse planning in the SFRL to conserve biodiversity and preserve ecological integrity and functionality	3,6,9,11
ST 9	Integrated landuse established in the SFRL to achieve conservation and sustainable development goals	11
ST 10	Enhanced protection of watersheds and water resources to enable hydrological balance in the SFRL	6
ST 11	Capacity built to predict, mitigate and address climate change impacts on human wellbeing, agriculture and human settlements in the SFRL	3,13
ST 12	Strengthened capacity to mitigate impacts of natural hazards and climate change on people, agriculture and economic development in the SFRL.	13,11
ST 13	Strengthened resilience and productivity of agricultural systems that simultaneously facilitate sustainable economic development and environmental conservation	2,5,12
ST 14	Enhanced socio-economic development of local people in the SFRL through effective management of natural capital	1,8,10

Part III: Addresses cross-cutting requirements to implement the SFR-LMP, focusing on gaps, opportunities and recommended actions to develop management oriented research, education and communication, and to reach full potential for nature-based tourism and environmental economic valuation. It contains four Strategic Themes, with their Strategic Objectives and recommended actions.

ST 15	Research supports conservation of biodiversity, soil and hydrology balance in the SFRL
ST 16	Education and communication promotes biodiversity conservation and sustainable development in the SFRL
ST 17	Environmental valuation facilitates economic development in the SFRL
ST 18	Nature and culture tourism in the SFRL reaches full potential

Part IV: Presents a broad implementation mechanisms for the SFR-LMP, taking into consideration that implementing the SFR-LMP needs excellent coordination among the implementing agencies and other non-state stakeholders, within an appropriate administrative and institutionalized setting with a legal basis.