TOURISM VALUE CHAIN ANALYSIS OF THE KNUCKLES REVERSTON TOURISM DESTINATION IN SRI LANKA

JULY 2022

ISB
INDUSTRIAL SERVICES BUREAU

TOURISM VALUE CHAIN ANALYSIS
FOR THE KNUCKLES REVERSTON
TOURISM DESTINATION IN SRI LANKA

Submitted to

UNDP Sri Lanka

and

Department of Tourism - Central Province

Submitted by

ISB
INDUSTRIAL SERVICES BUREAU

Industrial Services Bureau (ISB)

141, Kandy Road, Kurunegala

July 2022

ACKNOWLEDGEMENT

First and foremost, on behalf of the study team Industrial Services Bureau (ISB) would like to extend its gratitude to UNDP and European Union for giving this opportunity to conduct the study and facilitating the study with necessary technical guidance and stakeholder coordination. Also, it should be mentioned with great gratitude the endorsement made by the Ministry of Tourism recognizing this study as a nationally important initiative. Further it's our obligation to appreciate people who committed to support the study at the ground level. Central Province Department of Tourism under the fullest blessing of the Chief Secretary of the Central Province played an appreciating role throughout the period in all stakeholder coordination and mobilization for an active participation in the study. The effective stakeholder coordination was a great support for the study to collect required ground level data and validate them. Also, we appreciate the role played by SLTDA to enrich the study with technical inputs, verifications, reviews and streamlining the proposed strategic interventions. Further, SLTDA facilitated collection of national level data required by the analysis. Finally, ISB would be gratitude to mention the appreciating support extended by all key informants, regional level organizations, industry associations and various respondents of the study.

EXECUTIVE SUMMARY

This analysis intensifies identification of gaps and opportunities in local and regional development, community empowerment, increase the economic value addition that occurs within the Central Province and optimizing the environmental impacts and improving socio-cultural impacts of the tourism industry.

Recognizing the rapid degradation of natural environment of Knuckles range with exponential growth of tourism and developmental deprivation of local communities in and around Knuckles range led the United Nations Development Program (UNDP) in Sri Lanka in collaboration with Department of Trade Commerce and Tourism – Central Province to carry out the Tourism Value Chain (TVC) analysis. Industrial Services Bureau (ISB) extended its technical support to undertake the analysis. The Knuckles conservation forest, also a UNESCO world herniate is a country's premier biodiversity hotspot and is home to up to 1,033 plant species of which 15% are endemic, 128 Bird species of which 17 are endemic, 31 mammal species, 20 amphibians and 53 different reptile species which some characters as the leaf-nosed lizard which is also endemic to this range. Knuckles tourism is basically driven by the environmental asset which has number of attractions and opportunities for nature experience.

The analysis was able to incorporate the empirical investigation of functional micro (entity or individual actors), meso (industry level) and macro level (agencies at national level) value creation systems along with first level (direct actors) and second level (supply chains) value chain actors and agencies. The TVC assessment is based on source components of TVC such as tourist, actors, destination, local community and industry. The assessment adopted the TVC model introduced by the UNEP in 2018 that basically comprises sectors of transportation, accommodation, food & beverages (F&B) and other facilities, activities, services and attractions. The analysis methodology was built up to focus on local economic contribution of the TVC, socio cultural impacts, environmental impacts and organization and framework of the value chain. Impacts of the tourism value chain were measured against several indicators and major sectors and subsectors which are having significant contribution on impact creation.

Being the largest sector, accommodation sector holds 72 percent of the total value whereas transport, F&B, activities, services and attraction sectors follow respectively. Also, 20% of the total accommodation sector value creation is undertaken by local holders. The share of local value creation of all other sectors (except the transport) is significant, however, their contribution to the total tourism value is marginal compared to the accommodation sector. Supply chain analysis reveals that the accommodation and F&B sectors depend on local fruits and vegetable supply for about 30% of the total requirement which is sizable compared to the other local material supplies – fish, meet, egg, grains etc.

How best the sectors are performing was analyzed for two dimensions of market orientation and customer satisfaction. It was found that most of sectors and sub sectors are prepared poorly to offer standard and quality tourism services to visitors. This was a common weakness across all sub sectors except classified accommodation. Only few service providers are accredited by national tourism services standards (SLTDA). However, service providers are encouraged themselves to promote their services in online platforms and social medias. Still homestay providers poorly communicate their services through online or social media platforms. Analysis of visitor satisfaction reveals that most of the tourism services are ranked by visitors for good to average level whereas. Also, visitors who are highly dissatisfied with the services are also very low. However, comfort and sanitary facilities are poor for visitors ranking. Visitors suggest that the destination would be more enhanced by developing sanitary and comfort facilities, transports, restaurants and clean environment.

Knuckles tourism has been able to create around 1,500 direct employments through all sectors and sub sectors. Accommodation sector holds over 50% of total tourism employments. Share of the local employments of the accommodation sector is around 64%. More than 60% of those local employments (of accommodation sector) is formal salary or wage employments whereas the balance accounts for self-employments. As a whole a large part of the local employments is created by self-employment services such as homestay, street shops, three wheelers etc. Analysis of physical resources which was more focused on attractions reveled that sanitary facilities and parking facilities are poor or not available for many attractions. Some attractions are isolated without proper visitor management practices and attention of physical facilities. Poor attraction management has created some serious safety and security issues and social conflict situations which are unfavorable for tourism promotion and community participation.

Key findings of economic behavior analysis help to understand some of the root causes for performance gaps of the value chain and visitor services. Local authorities are not motivated financially to extend their services for clean environment management and waste collection at attractions. There is no system to compensate their cost and effort through the tourism value. Also, local holders are not financially strong enough to improve service quality through further investments. Most of them have loan or lease commitments to settle in return of financial facilities granted for startups.

Analysis of youth and socio culture around the tourism reveals both positive and negative impacts on the society and tourism value creation system. Tourism has open up opportunities for youth and women to participate in the value chain as a service provider or an employee. However, the engagements of both categories are mostly limited only to support services or low value-added services such as three-wheeler transport, traditional foods, street shops. It's only self-employment for livelihoods. Participation of women in knowledge and skilled base tourism or high value services remains low due to social constraints and poor support services.

Environmental analysis included Green House Gas emission (GHG), energy use, water use, waste water and solid waste generation by the tourism. The analysis draws important conclusions for environmental impact mitigation. It was identified vans and personal vehicles (cars) as hotspots of GHG emission. Classified hotels sub sector is identified as energy consumption hotspot whereas the boutique hotel sub sector consumes a larger quantity of water while generating equally larger quantity of waste water. Sub sectors of hotels, boutique hotels and guesthouses are equally significant for food waste generation.

Organization and framework analysis was carried out for different dimensions aiming identification of impediments and impacts on value creation system. The existing systems of tourism services certification requires more outreach and incentive packages to encourage service providers for certification. Key stakeholders namely service providers (sectors and sub sectors) and attraction managing agencies and development agencies are not in a common forum to operate the destination for strategic objectives. The community should have an active role in tourism more than of now for both community benefits and environmental benefits. Conservation objectives are not achieved due to resource constraints and social barriers.

The destination should have a strategic development plan to address primary constraints of environmental conservation, local economic development and sustainable management of the destination. The community and tourism service providers (sectors and sub sectors) should be in destination management system with proper empowerment to take their maximum participation in the conservation and sustainable use of resources. It is essential to build capacities of local actors for quality and value-added services, innovative tourism services and networking with markets. Also, it’s timely requirement of the destination to ensure good physical facilities including parking, safety, sanitary, waste management for visitors and service providers. All lesser known or isolated attractions should be governed by proper management bodies either from community or hybrid/partnerships to assure the environmental and economic sustainability. It is highly encouraged the participation of local authorities in destination management assigning with proper management of the infrastructure and human resource deployment for attraction monitoring. Expansion and proper management of the accommodation sector is highly important to mitigate environmental impact and secure the sustainability of local service providers. Only selected zones should be allowed for large hotel and recreational projects as they have to comply with eco-friendly standards and regulations.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

CSO	Civil Society Organizations
DMOs	Destination Marketing Organizations
DS	Divisional Secretariat
ESCAMP	Eco-Systems Conservation and Management Project
F&B	Food and Beverages
FGD	Focus Group Discussions
GDP	Gross Domestic Product
GHG	Green House Gases
GOSL	Government of Sri Lanka
IPCC	Inter-Governmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
KII	Key Informant Interview
NWSDB	National Water Supply and Drainage Board
PWD	Persons with Disabilities
RFO	Range Forest Officer
SLTDA	Sri Lanka Tourism Development Authority
SME	Small and Medium Enterprises
TVC	Tourism Value Chain
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization.
UNWTO	United Nations World Tourism Organization
WMO	World Meteorological Organization

SECTION I
INTRODUCTION

1.1 Background of the Study

Present status, emerging trends and challenges

The tourism sector reports 5 percent GDP and a produced nearly 400,000 direct and indirect job market of which two third is occupied by women in 2018/2019; and is vital to the national economy of Sri Lanka. Experts believe tourism is a sector that can generate quick foreign currency to the national economy with minimum inputs compared to other sectors. The sector has been accounting for a five percent annual growth rate globally. However, the COVID-19 pandemic caused for a fifty percent decline the tourist sector in 2020. Locally, the tourist sector was affected both by the Easter Sunday attack and the COVID-19 pandemic contributing towards approximately 300,000 losing income generation opportunities and SME investments. Owing to the global lockdown and stagnation, it is believed that tourism can regain with an extra mile within the next one to two years. (Annex 01)

Knuckles range as a biodiversity hotspot

Located in the districts of Kandy and Matale in the Central Province of Sri Lanka, the knuckles mountain range (Knuckles region and Reverstone region) forms one of the most prominent and important mountain ecosystem. The Knuckles Mountain range is situated over 1,500 meters spreading over 18,500 ha in the Kandy and Matale districts. The Mountain range was declared a climatic reserve in 1873 and a conservation forest in 2000, later a UNESCO Man & Biosphere Reserve and a World Heritage Site in 2009. The Knuckles conservation forest is a country's premier biodiversity hotspot and is home to up to 1,033 plant species of which 15% are endemic, 128 Bird species of which 17 are endemic, 31 mammal species, 20 amphibians and 53 different reptile species which some characters as the leaf-nosed lizard which is also endemic to this range.

Knuckles range as an ecotourism and rural tourism destination

Knuckles range which has a unique mountain ecosystem is regarded as one of the premier mountain tourist destinations in the country. The Knuckles Forest possesses a significant potential for eco based tourism. It possesses an enormous scenic beauty which could attract both local and international tourists. Moreover, the villages surrounding the forest are traditional villages with specific cultural and social characteristics, thus making it ideal supply location for developing ecotourism In addition to the ecosystem services, the Knuckles Forest also contributes both directly and indirectly to the national and local economy.

A comprehensive strategy aligning with environmental, social and economic aspects is required to harness the true potential of Knuckles and its associated sites. The study aims to provide a comprehensive value chain analysis with special focus on community, environment and regional development. The *Transforming Tourism in Sri Lanka: Emerging from As A Strong, Resurgent and Rebranded Industry* initiative implemented by the UNDP with financial contribution by the European Union contracted Industrial Services Bureau to conduct a Value Chain Analysis for Knuckles tourism destination in Sri Lanka.

After reviewing models introduced by UNCESCO, World Tourism Organization and United Nations the study team developed a structure that embarrasses its essential features. The sectors and sub sectors of the value chain is mapped with regard to the present circumstances based on this structure.

1.2 Objectives of the Analysis

The analysis is designed to extend support towards the Provincial Council of the Central Province and the Department of Forest Conservation to the effectively manage tourism development programmes while ensuring the sustainability of cultural, natural and historical resources.

The overall goal of the Value Chain analysis is to increase the economic value addition within the Central Province and specifically within the Knuckles Tourism Destination optimizing the environmental impacts and improving sociocultural impacts of the tourism industry to the selected geographical area.

1.3 Scope of the study

The scope of this study includes identification and analysis of the tourism value chain of the destination Knuckles Reverston and its supply chains (the value creation system). Value chain analysis covers micro level functions (functions and operations of value chain actors that creates direct economic value), meso level-support functions and macro level fundamental elements of the offering and fundamental functions as the prerequisite for tourism development in the region (policies, regulations, standards, certification etc.)

1. Mapping the value chain
   Identifying and mapping the businesses/services, actors and processes of the present value chain, and possible value chain while assessing the competitiveness, challenges and opportunities.

2. Identifying potential opportunities to introduce / develop / strengthen strategic partnerships between actors in the value chain and other service providers including the government institutions.

3. Taking into consideration the economic and market aspects, socio-cultural aspects, organizational and framework aspects and environmental aspects/parameters of the value chain. The analysis intends to answer the following questions: (Box 1: Indicators identified to assess the parameters of value chain)

Economic and Market Analysis

1. What is the percentage of value addition happening within the region
2. Who benefits from the value addition
3. What is the value of goods and services bought in from outside
4. Local and Regional Development
5. Regulatory Mechanism and Collaborations
6. Market accessibility local actors
7. What are the requirements of the key stakeholder groups including target customers What are the weaknesses of existing product offering
8. How to reach the customers; What are the crucial multipliers, intermediaries and platforms available to reach customers
9. Power structure and benefit sharing
10. Sustainable Investment and Funding
11. Who are the investors in sectors/sub sectors
12. Employment opportunities for local people
13. Who own lands
14. Accessible building and other physical resources by local actors
15. Positive and negative economic impacts
16. What would be the income range of new employment opportunities

Socio Cultural Analysis

1. Socio-cultural positive and negative impacts
2. How many men and women can be employed;
3. What are the opportunities to support more women employment;
4. What are the opportunities to support disabled, elderly and other vulnerable groups;
5. Attraction of youth by sectors/sub sectors
6. What are the key negative impacts of tourism on socio culture of the destination
7. Inclusivity and equity of gender and youth

Organization and Framework Analysis

1. Regulatory Mechanism and Collaborations
2. Institutional Structure and Implication of Tourism Value Chain in Knuckles -Riverston
3. National, Provincial and Local Authority integration and coordination
4. Collaboration of Actors and Agencies
   Social Transformation
5. Public, Private, Community Partnership (PPCP) What are the potentials for synergies and stronger cooperation

Environmental Analysis

1. Is there any potential to promote conservation or sustainable use of biodiversity?
2. Is there any potential to promote climate change mitigation and adaptation?
3. Is there any potential to improve holistic waste management
4. What is the potential for improving other elements of the natural environment?

4. Analyzing the supply chain associated with the tourism value chain.

Identifying the supply chain elements associated with the tourism value chain of the destination Knuckles Reverston to ensure a comprehensive understanding on the value creation system of the destination is available.

5. Developing strategies to improve the regional value creation
   Identify, assess and prioritize potential strategies available to improve the value creation for the destination Knuckles Reverston. Effectiveness and feasibility of the potential strategies will be the main criteria for selection.

1.4 Sectors and Sub Sectors

The tourism value chain generally consists of mainly six sectors; namely Transportation, Accommodation, Food & Beverages, Tourism Activities, Attraction and Services. The following table outlines the different sub-sectors identified under each sector for Knuckles Reverston tourism value chain. Identification of sub sectors of the value chain is an important exercise in this analysis.

Sector	Subsectors
Transportation	Three Wheelers Van Coaches Motorbike
Accommodation	Hotels and Guesthouses Homestay Bungalows Dormitory Camping
Food and beverages	-Direct value chain actors: Traditional food stalls/homes, restaurants, *Helabojun*, mobile food sellers, others - Supply chain actors: Fruits & vegetable suppliers, meat & fish suppliers
Tourism Activities	Trekking Hiking Adventure experience Water sliding Fish therapy Village tour

Services (Including creative industries)	Local people/societies involved in *Kithul* based products, Cardamom, Handicraft, Bee honey, Material supplier, guide service (formal and informal)
Attractions/Assets	**Waterfalls** Sera Ella Hunnas fall Bambarakiri Ella Hunuganga Ella Pathana Ella Dumbara Ella Rathkinda Ella Duwili Ella Jodu Ella Saari Ella **Mountains** Lakegala Atanwala Maningala Reverston tower **Trekking sites** Pitawala pathana Pathanegama view point Manigala Lakegala Duwili Ella Reverston Deanston **Lakes** Sembuwatte Narangomuwa Vila Rangala Vila Kataranthenna Wewa Rathnathenna wewa **View points** 36 view point, Kelabokka

	Camping sites Wawethenna
Supply chains	Supply chains of accommodations (hotels & guest houses and restaurants will be selected Fruits and vegetable suppliers, meat and fish suppliers are key actors.

1.5 Overview of Knuckles Conservation Range

The Knuckles Mountain range, a world heritage site, lies in both Matale and Kandy districts of the Central Province of Sri Lanka. When the mountain range is observed from a distance, it resembles the fingers of a clenched fist. Due to this picturesque appearance, the early European visitors called it the Knuckles and it has become the common name for this miracle mountain range. The local residents have traditionally referred to this mountain as *Dumbara Kanduvetiya* meaning Mist-laden Mountain Range. It consists of major mountain peaks with some other smaller peaks. Some of the important peaks are Dotulugala (1564m), Koboneelagala (1544 m), Knuckles (1852m), Gombaniya (1893m), Kalupahan (1618m), Lakegala (1310m) etc. The Knuckles range is managed by the Department of Forest; however, some other governmental and non-governmental organizations provide their support and contributions to protect and preserve its unique and natural environment.

The Knuckles Forest range in Sri Lanka is one of the richest natural biodiversity hotspots. It consists of a unique ecosystem, owing to its geographical setting and related ecological aspects. In particular, it is rich in habitat diversity, which covers a wide range of habitats within a relatively small area. As a result, the Knuckles Forest has a significant potential for a nature-based sustainable tourist activity. Enormous scenic beauty, traditional villages surrounding the forest, and specific cultural and social characteristics attract nature and community tourists largely.

The Mountain range extends nearly about 19 km from Laggala to Urugala and it is situated from 7°21’ to 7°24’N and 80°45’ to 80°48.5’E. The Knuckles Mountain range is situated over 1,500 meters spreading over 18,500 ha in the Kandy and Matale districts. The Knuckles Mountain range was declared a climatic reserve in 1873 and a conservation forest in 2000, later a UNESCO Man & Biosphere Reserve and a World Heritage Site in 2009. The Knuckles conservation forest is a country’s premier biodiversity hotspot and is home to up to 1,033 plant species of which 15 percent are endemic, 128 bird species of which 17 are endemic, 31 mammal species, 20 amphibians, and 53 different reptile species which some characters as the leaf-nosed lizard which is also endemic to this range.

The tourists and the nature lovers can access the vast Knuckles range from different routes. The most popular access is through Matale via Rattota and Reverston; from Laggala Pallegama; from Wattegama via Panwila (Figure/Map 1). From the Kandy district, visitors can access the Knuckles ranges on A26 road running from Kandy to Hunnsgiriya. At Hunnasiriya, B grade road leads to the Deenston and Corbet’s Gap which opens up magnificent views of Knuckles range. The road that leads from Hunnasgiriya to the village of Meemure (34 km), is one of the most popular destinations among the local tourists.

The Knuckles range is the source of several rivers including Heen Ganga, Kalu Ganga, and Hulu Ganga, which is also considered an important watershed. Four major forest formations can be found in Knuckles as lowland dry semi-evergreen forest, mid-elevational wet evergreen forest, mid-elevational dry evergreen forest, and montane wet evergreen forest respectively.

The Knuckles Mountain Range is important due to several factors. Accordingly, it has a parasitical quality due its mountain peaks, crystal clear and perennial waterways, cloud forests, and exquisite fauna and flora. Pregnant with history running into several millennia and a veritable treasure house of cultural heritage, the Knuckles Mountain Range can be considered a mirror to the past. A remarkable feature of this area is that most of the climatic conditions of Sri Lanka can be found within the extent of a mountain range. All these hanging climatic conditions can be experienced within half an hour's walk through this valley. The location of the hills, the particular effect of the monsoons, and the wind factor generate a certain climatic diversity in the area.

The biodiversity of the Knuckles Forest is very rich and it is the home to diverse flora and fauna including many endemic species. There is a great variety of fauna found in the Knuckles region. The leopard, an endangered species is also found in the forests. Considerable numbers of Sāmbhar live there, and it is also inhabited by barking deer, mouse deer, wild boar giant squirrel, and the loris. The Otter, a very rarely seen animal can be found around the water holes. The purple-faced leaf monkey and the toque monkey, which are endemic to Sri Lanka, are also found.

Diversity of Animals (Fauna): There are twenty-one endemic bird species found in Sri Lanka and out of this, fourteen have been recorded in the Knuckles region. They include the Yellow-fronted Barbet, Brown-capped babbler, Dusky-blue flycatcher, Sri Lanka lorikeet, Sri Lanka white-eye, Spotted winged thrush, Sri Lanka jungle fowl, Sri Lanka spurfowl, Sri Lanka grackle, Yellow-eared Bulbul, Sri Lanka blue magpie, Layard's parakeet, Arrenga (Sri Lanka Whistling thrush) and Sri Lanka Wood pigeon. In addition to these species, more than a hundred other resident and migrant bird species can be observed here at different times of the year.

Table 1 Diversity of Animals

	Family	Genus	Species	Endemic	Nationally Threatened
Birds	26	42	128	17	20
Amphibians	3	4	20	12	12
Butterflies	4	11	60	5	8
Mollusca	6	10	17	12	0
Mammals	12	17	31	4	9
Reptiles	4	10	53	53	24
Fish	4	9	15	8	7
Total	**55**	**94**	**324**	**81**	**80**

Source: National Conservation Review -1993

The fish that are found in the streams and water holes are of special importance. Twenty-eight species have been identified in the Knuckles Forest. Of these, nine are endemic to Sri Lanka and are endangered, and three of them can be only found in the knuckles. They are Phillip's garra (Garra phillipsi) Martenstyn's barb (Puntius martenstyni) and the Blotched filamented barb (puntius srilankennsis).

A large variety of amphibians have been found in these forests and of these, the Endemic marbled cliff frog (Nannophrys marmorata) is limited to the Knuckles region.

A number of interesting lizard species have also been recorded in the area. The Pigmy tree lizard (Cophotis ceylonicas) is endemic to Sri Lanka. This genus is important because so far only two species have been found in the whole world, the other being recorded in Java. Tennent's horned lizard (Ceretophora tennenti) is also endemic to Sri Lanka and restricted to the Knuckles region. Two other endemic species, the Earless lizard (Otocryptis wiegmanni) and the Three-banded green lizard (Calotes lioceplalus) have been recorded here.

In addition, a large number of species of reptiles, spiders, butterflies, and other insects have been found in the knuckles range, and some are endemic to Sri Lanka.

Diversity of Plants (Flora): The biodiversity hot spot Knuckles is home to 1033 different plant species belonging to 141 different families.

Table 2 Diversity of Plants

Family	Genus	Species	Rare	Endemic	Nationally Threatened
141	595	1033	12	160	11

Source: National Conservation Review -1993

Some examples for families are

Snake Thumb (Persicaria nepalensis)
Sensitive Plant (Mimoa pudica)
Ceasar Weed (Urena lobata)
Common Lantana (Lantana Camara)
Dog´s Tail (Stachytarpetha urticaefolia)
White Rain Lily (Zephyranthes candida)
Astroeupatorium inulifolium

The naturally and economically significant biodiversity hotspot has faced many issues and challenges due to the unsustainable human intervention including unplanned tourism development. The destruction of these forests would lead to the gradual decline and eventual disappearance of these endemic species (which are only found in Sri Lanka) and such disappearance will signify the total extinction of these species from the face of the earth.

1.6 Map of the Attractions

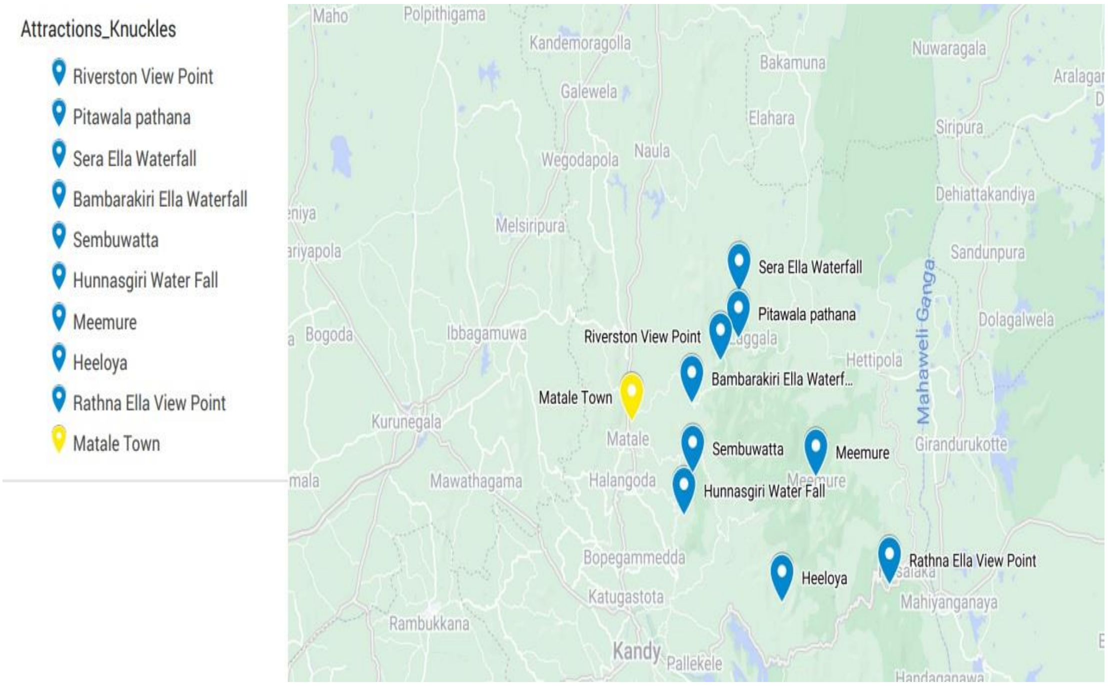


Figure 1 Map of attractions

1.7 Economic, Geographic and Demographic Profile

Four major clusters; Reverston Pitawalapathana, Sembuwatta, Heeloya and Meemure are identified according to geographical distribution of attraction. The surrounding community comprises of both the rural and the estate sector. Sembuwatte cluster is bordered mainly by an estate village while the other three clusters surround rural villages. Communities around Reverston and Meemure attractions are geographically isolated with poor access of transport and other health and education facilities. The main economic and demographic profile of the communities surrounding the key attractions of Knuckles range is listed below (Table 1).

Agriculture is the primary livelihood of these communities. Villagers produce paddy as the main crop along with secondary cultivation such as other seasonal crops, i.e. vegetables. Spices contributes to a sizable livelihood for rural communities. The estate communities are daily waged workers in Tea estates. Persons with Disabilities (PWDs) are an important segment of the community which requires promotion of inclusive approaches to allow them to join the economic and social system equally. However, the tourism has not contributed meaningfully for inclusivity of PWDs.

Table 3 Economic, Geographic and Demographic Profile of communities around attractions

Attraction (clusters)	GN divisions and villages	No. of families	Population	Economic activities	Female population	Youth population	Population over 35 yrs	Disabled population
Pitawala Pathana ,Reverston, Pathana Ella	Pitawala (Pitawala)	80	203	Paddy Vegetable Pepper Cultivation	94	28	133	4
	Atanwala (Atanwala, Walpolamulla)	51	138	Paddy Vegetable Pepper Cultivation	70	28	76	7

Attraction (clusters)	GN divisions and villages	No. of families	Population	Economic activities	Female population	Youth population	Population over 35 yrs	Disabled population
	Rathninida (Rathninda, Pallekumbura)	61	154	Paddy Vegetable Pepper Cultivation	73	24	94	3
	Mahalakotuwa (Mahalakotuwa, Dabagahamadiththa, Kolongasmulla)	64	177	Paddy Vegetable Pepper Cultivation	80	36	104	5
	Madaela (Polommana, Katupollanda, Malwaththa)	57	182	Paddy Vegetable Pepper Cultivation	96	52	90	2
	Ilukkumbura (Kukulamalpatha, Thelgamuwa)	70	194	Paddy Vegetable Pepper Cultivation	94	23	120	3
	Rambukoluwa (Rambukoluwa)	63	164	Paddy Vegetable Pepper Cultivation	80	28	88	2
	Dammanthanna (Dammanthanna)	27	77	Paddy Vegetable Pepper Cultivation	39	24	41	2
	Poththatawala (Poththatawala)	31	83	Paddy Vegetable Pepper Cultivation	44	21	51	1
	Diulgaspathana (Diulgaspathana, Maussakanda, Karagasthanna)	13	45	Paddy Vegetable Pepper Cultivation	20	14	23	-
	Gagala Puwakpitiya (Puwakpitiya, Habaragahaela, Waragolla)	127	340	Paddy Vegetable Pepper Cultivation	166	53	197	7
	Lakegala (Alahena, Korosgala, Walithuduwa)	98	278	Paddy Vegetable	134	58	150	3

Attraction (clusters)	GN divisions and villages	No. of families	Population	Economic activities	Female population	Youth population	Population over 35 yrs	Disabled population
				Pepper Cultivation				
Memure	Kalugaloya	153	460	Paddy and Vegetable Cultivation. Pepper Cultivation	232	138	239	7
	Karabakatiya	34	92	Vegetable Cultivation	44	28	47	2
	Pusseela	140	337	Paddy and Vegetable Cultivation. Pepper Cultivation	175	101	175	4
	Kaikawala	45	114	Paddy Vegetable Pepper Cultivation	57	34	59	2
	Memure	120	323	Paddy Vegetable Pepper Cultivation	150	97	167	4
	Kubukgolla	93	256	Paddy Vegetable Pepper Cultivation	126	77	133	3
Sembuwatta and Hunnasgiri Ella	Raithalawa	345	1366	Tea, Vegetable Cultivation	663	410	683	12
	Hunnasgiriya Watta	389	1730	Tea, Vegetable Cultivation	842	501	865	15
	Elkaduwa	302	1070	Tea, Vegetable Cultivation	527	310	546	13
	Elkaduwa Waththa	370	1642	Estate workers	875	492	838	

Attraction (clusters)	GN divisions and villages	No. of families	Population	Economic activities	Female population	Youth population	Population over 35 yrs	Disabled population
Bambaraki Ella	Babarakiriella	293	985	Paddy and vegetable Spice	479	507	202	12
	Madawaththa	281	993	Paddy and vegetable Spice	498	355	146	5
	Madakumbura	294	1452	Paddy and vegetable Spice	735	516	170	8
Heeloya	Heeloya(Heeloya mada Kotasa, Heeloya watawala, Weragodathanna, Viharagama)	263	870	Paddy and Vegetable Cultivation	443	275	188	0
	Thangappuwa	92	297	Tea	158	85	72	0

Source: Divisional Resource profiles – Rattota and Ududumbara

1.8 Outline of the Report

The report is divided in to five sections; Introduction, Methodology, Literature Review, Analysis and Strategic Recommendations. Section I consists of includes background of the analysis, objectives, the scope and background of the geographical location/attractions. Section II carries the conceptual framework, questions of analysis, data and data collection methodology. Section III outlines the tourism industry and its economic significance and its impact on the economy and society, policies and the organizational structure and the environmental value of the destination. Section IV describes findings and gaps. Each value chain sector overview will provide facts to understand the sectors broadly. The analysis is organized under four sub-headings; economic, socio-cultural, environmental and organizational and framework. Economic analysis provides an overview of sectors and sub sectors. In addition, the total value creation local value creation, employments, resources and economic behaviour are discussed separately. Socio cultural analysis highlights positive impacts and negative impacts of tourism on the socio culture of communities. Environmental analysis focused on hotspot analysis and structures on indicators of GHG emission, energy use, water use and solid waste. Organization and framework analysis present policies, regulations, organizational coordination and resource allocation. The section concludes with a gap analysis. Section V - Strategic Recommendations provides recommendations under quality of tourism, tourism offering, conservation and inclusive growth.

SECTION II
LITERATURE REVIEW

2.1 Impact of Tourism on the Environment, Economy, and Socio-culture of Rural Sri Lanka

Tourism is an has significant industry is constantly determined by its externalities. The industry has had positive and negative impact on socio-culture, environment, and economy especially. Paying attention to this impact is important to a country as a whole. Tourism is the third-largest source of foreign revenue and makes a significant contribution to the GDP of Sri Lanka. Tourism industry has fallen into many criticisms and arguments among the general public due to its impact.

The impact of enclaved mass tourism on rural fabric is unpreventable even though rural areas have not been taken into consideration when developing conventional tourism. Tourism have not only generated more than 173,000 direct employment opportunities and nearly 229,000 indirect employment (SLTDA statistics 2019), but have also opened up many income generating opportunities for small and medium operators. Tourism to some extents have also supported conservation of natural, historical and cultural resources. Nevertheless, the negative impacts of tourism have expanded in comparison to positive impact. (Annex 02)

2.2 Local and foreign tourist arrivals to Knuckles and Reverston

Based on the most recent available statistics the figures below outline the local and foreign tourist arrivals to Knuckles range in 2019.

Around 33 percent of local tourists who visited conservation forests have visited Knuckles conservation. But, out of the foreign tourists who visited conservation forests only 2 percent have visited the Knuckles conservation forest. There are 2 popular entrances to the Knuckles; Deenston, Kandy and Pitawalapathana, Matale of which, about 90 percent of visitors to the Knuckles range enter from the Pitawalapathana entrance.

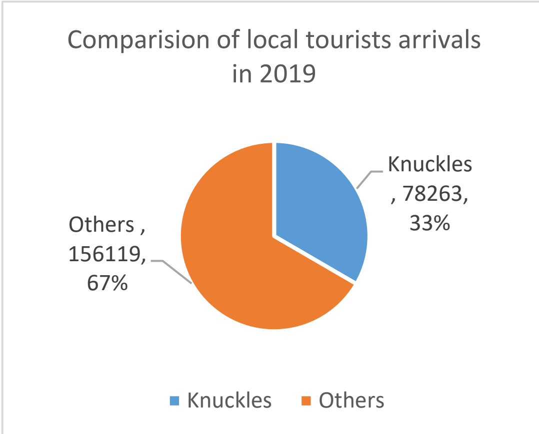


Figure 2 Comparison of local tourists' arrivals in 2019
Source: SLTDA statistics 2019

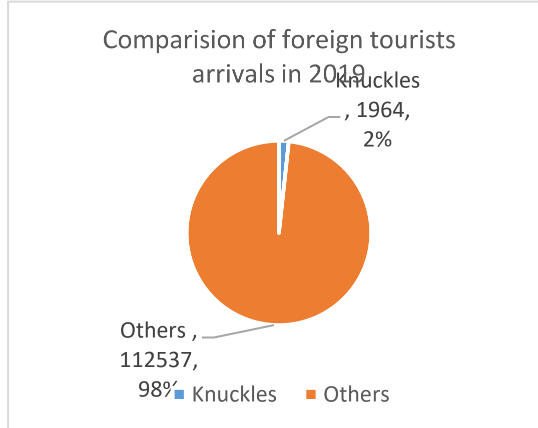


Figure 3 Comparison of Foreign tourists' arrivals in 2019
Source: SLTDA statistics 2019

During the past five years, the local visitation has been consistently growing where number of local visitors arriving at the Illukkumbura/Pitawala Panthana entry point exceeding 70,000 people in 2019. Weekend visitation in popular destinations like Reverston has led to visitor management challenges like congested roadways and overflowing parking areas. Foreigners represent an exponentially smaller number of visitors to Knuckles Conservation Forest. Some of the main reasons for the small number of foreign visitors include lack of adequate tourism lodging within the region and a lack of awareness with regards to natural and cultural attractions Knuckles Conservation Forest has to offer. Both issues need to be addressed in order to promote foreign visitation. (Annex 03)

2.3 Mode of Tourism in Knuckles

There are four modes of tourism (Annex 02) and all four modes of operations take place at Knuckles. The "direct routes" and "partial orbit" tours are common. Most visitors travel directly to Reverstone and Pitawala Pathana and return the same day and some will visit these destinations on route another destination as a part of a tour itinerary. However, the "full orbit" and "Fly-Drive" tours occur rarely due to the availability of different access routes, and the attractions are scattered throughout the forest range. The growing trend of allocentric perception and alternative tourism practices in the recent past nevertheless have considered Knuckles for "Partial Orbit", with few natural and cultural attractions along with some community-based activities. Some tourists fly to the Knuckles range from which they use land transportation to the destination.

The “Fly-Drive” mode of tours initiated neither continued nor grew resulting the failure to develop suitable value chain for tourism. There is a great potential for “Full-Orbit” tourism operations in the Knuckles range including, Reverston, Pitawala Pathana, Trekking, Waterfall tourism, visiting Meemure, Lakegala, Heel Oya, Thangappuwa, Sembuwatte, etc. Nevertheless, visiting all locations from a single tour has become a challenge due to the vast geographical coverage and poor accessibility. The geographical location and connected attractions and other value chain components of Knuckles create opportunities and potential for a “Full Orbit”, “Base Camp”, “Regional Tour” and “Trip-Changing”. The lack of value creation in Knuckles and surrounded tourist sites has led to constraints and underperformance. (Annex 04)

2.4 Initiatives to Conserve Knuckles as a sustainable ecotourism attraction

In collaboration with Sri Lanka Wildlife Conservation Society, the Ministry of Mahaweli Development and Environment of Sri Lanka under the Eco-Systems Conservation and Management Project (ESCAMP) funded by the World Bank developed an Action Plan to implement a sustainable ecotourism programme in Knuckles range.

The Small Grants Programme of the United Nations Development Programme (UNDP) funded by the Global Environment Facility has helped empower local communities spread throughout the Knuckles range to pioneer solutions that help conserve the area’s ecology and natural resources while introducing opportunities to develop sustainable livelihoods in the region. This project has supported establishing and strengthening a community-based organization called “Guardians of Knuckles”.

IUCN Sri Lanka has implemented a project to improve forest governance of the knuckles range in 2009/2010. Further, IUCN also implemented a project to “Strengthening Climate Resilience of Subsistence Farmers and Agricultural Plantation Communities residing in the vulnerable river basins, watershed areas and downstream of the Knuckles Mountain Range Catchment of Sri Lanka” in 2020/2021. Among several IUCN interventions, this project implemented actions under IUCN green listing certification process in Knuckles Conservation Area.

In addition, the Ministry of Tourism, Tourism Development Authority and Department of Tourism of Central province have included development of tourism industry in the Knuckles range in their short term and medium-term tourism development plans and roadmaps.

Threats to the Knuckles conservation forest: despite its importance, vital areas of the Knuckles Region have become degraded due to human activities such as encroachment, illegal logging, land clearing, tea planting and cardamom cultivation. The area is also prone to natural disasters including climate-induced events.

But despite its rich biodiversity and unique climate, the cultivation of cardamom on a large scale in the montane forests destroyed jungle land in this fragile forest ecosystem many years ago. Cardamom was cultivated in the Knuckles Range without any concern to the forest until it was banned in 1985 due to its sever damage to the ecosystem. However, at present discussions are taking place to revive cardamom cultivation in the Knuckles Mountain range.

2.5 Prevailing Tourism Policies and Procedures

Sri Lanka initiated its formal tourism development with the establishment of the Ceylon Tourists Board under Act No. 10 of 1966 and the Ceylon Hotels Corporation Act No. 14 of 1966. Since then, the tourism industry in Sri Lanka was developed and managed under different policy guidelines and principles provided by development plans, national strategies, and parliamentary acts. This includes the 10-year Ceylon Tourism Plan (1967-1976), Interim National Development Plan (1971-1976), Tourism Master Plan (1992-2001), Tourism Act No. 38 of 2005 replacing the Sri Lanka Tourist Board Act No. 10 of 1966, Tourism Development Strategy 2011-2016, and Tourism Strategic Plan 2017-2020. In addition, policies and legislation relevant to the tourism sector including the Finance Act, No. 25 (2003), the National Environment Act, No. 47 (1980), the National Heritage Wilderness Area Act (1988), the Civil Aviation Act, No. 14 (2010), the Greater Colombo Commission Law, No. 4 (1978, and amendments in

1980, 1983, 1992), a National Cultural Policy (proposed in 2007, but not implemented), the Foreign Exchange Act (2017), the Labour Code of Sri Lanka (including National Minimum Wage of Workers Act, No. 3 of 2016), the Land Development Ordinance 1935 (No. 19 of 1935, amended regularly, including 2010 and 2012), the National Civil Aviation Policy for Sri Lanka (2016). However, contextual deficiencies and implementational impediments compelled the country to seek a policy revision and new policy setting for the tourism industry in Sri Lanka. Prevailing policies and their implementation encountered the following challenges:

1. Weak governance (fragmentation of planning, management, and policy-making related to tourism)
2. Endangered tourism assets (decline in Travel and Tourism Competitiveness Index rankings of natural resources – produced by the World Economic Forum)
3. Limited access to markets (lack of specific market information, limited access to high-yield markets)
4. Limited investments (lack of clarity on Tourism Zones, small investment incentives connected with tourism, access to land rights complicated)
5. Unavailable and limited skills (overly centralized tourism education and disparities in the curriculum)
6. Insufficient connectivity (lack of direct international flights to most responsible markets, poor road network and internal connectivity, issues of online access to train tickets)

2.6 Policies on Discussion

The proposed National Tourism Policy aims to provide an effective framework and the necessary impetus to enhance the structure of tourism's institutional frameworks, reform its regulatory frameworks, upgrade the information management process, and improve the market environment to drive a more sustainability-oriented (responsible, inclusive, fair), efficient and effective tourism development in the future. This intensifies to embark on several conditions that include particularly following aspects:

Participation in Governance: All stakeholders (public and private) must be able to have a voice in tourism development; the public sector must be able to attract top talent and data should be collected and utilized for the sector's development and regulation, including managing the informal sector.

Responsibility towards cultural and natural assets: New tourism products should be designed and developed in a climate-and nature-conscious manner that benefits local communities; natural resources should be protected from over-exploitation for tourism and over-visitation.

A resurgent, skilled, and resilient private sector: The industry must be better prepared for future crises, including anticipated and unforeseen events; marketing efforts should adopt new tools and new trends; training must be made more relevant to the transformed global context and more accessible; world-class destinations and product development; the island's connectivity to key tourism markets and internally, to the important sites, products, and services, needs to be enhanced; provide improved and enhanced digitalized services through public-private collaboration and building of partnerships with global institutes and as a cross-cutting theme.

SECTION III
METHODOLOGY

3.1 Sectors and Sub Sectors

The total value creation of the Tourism value chain is contributed by six sectors. Namely; Transportation, Accommodation, Food & Beverages (F&B), Tourism Activities, Tourism Attractions and Services. Each sector consists of several sub sectors (for example the accommodation sector consists of classified hotels, boutique hotels, guesthouses, homestays etc.). Further, the value chain analysis identified the diversity of sub sectors determine what sectors and sub sectors are important for different analysis.

3.2 Analysis Framework

Analysis framework divided the total analysis process into few key dimensions to answer the questions of value chain analysis (or reaching the objectives of value chain analysis). Dimensions included Economic Analysis, Socio-Cultural Analysis and Environmental Analysis. Each dimension was analyzed using appropriate indicators which are directly connected with the analysis questions. The following model illustrates the analysis framework.

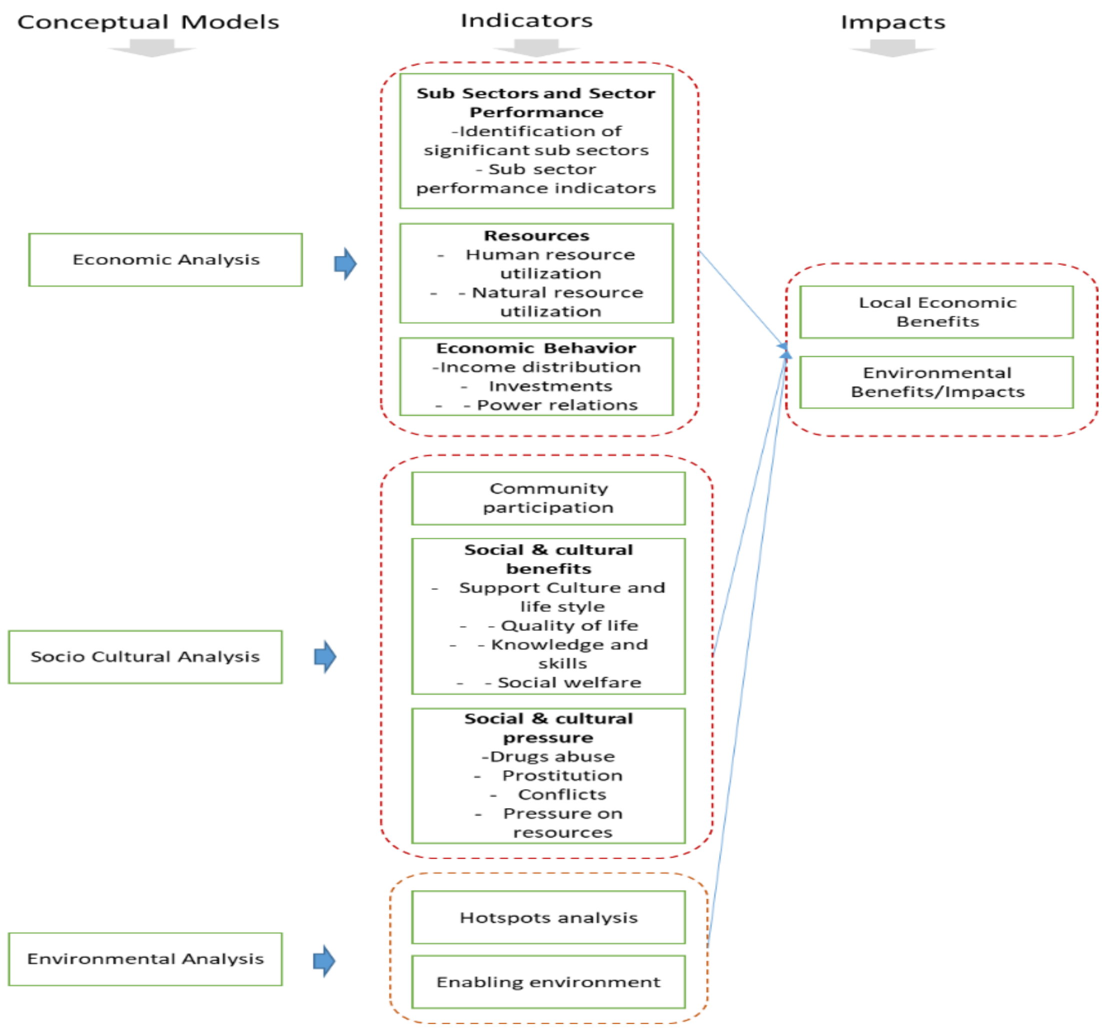


Figure 4 Analysis framework

3.3 Operationalization of Methodology

The following section presents indicators, sub sectors or sectors considered for analysis and expected outputs of the analysis.

Economic Analysis:

Indicators – 1 <u>Performance of sectors and sub sector</u> (Value creation by sub sectors and Sector market orientation)
Sectors and sub sectors: All six sectors and their sub sectors were considered
Outputs:

- Value addition happening within the region (share of local value addition) - Value addition done by local value chain actor (cost and margin of local value chain actors) - Local value addition taking place in the selected local supply chains - Local people engagement of selected local supply chains - Gap between existing tourism products (offered by local actors) and customers'/visitors' existing & future needs - Percentage of local actors with necessary skills? - Established market linkages with leading tour operators/agents (#) - Degree of using marketing and promotion strategies (in a scale) - Percentage of local actors with necessary registrations, certifications, permits, etc.? - Degree of relationship with multipliers and intermediaries in the tourism value chain (in a scale)
Indicator -2: Visitor satisfaction and preferences (Under the sector performance)
Sectors and sub sectors: All six sectors
Outputs: - Profile of visitors - Behavior and visiting patterns - Level of visitor satisfaction on sectors (products/services), attractions, facilities, visitor management etc. - Preferences of visitors by sub sectors (products/services/activities) - Products/services that would be purposed if available (currently they are not available)
Indicator 3: Visitor satisfaction Behavior and visiting patterns Level of visitor satisfaction on sectors (products/services), attractions, facilities, visitor management etc. Preferences of visitors by sub sectors (products/services/activities)

Products/services that would be purposed if available (currently they are not available)
Sectors and sub sectors: Transportation: Three wheelers, Accommodation: Homestay, Hotels Food & beverages: Traditional foods Activities: Trekking & hiking Service: Guide service
Outputs: - percentage of local people engagement (share of local people engagement) - No. of significant local supply chains and local actors in supply chains - Utilization of natural resource and value creation through natural resource
Indicator 4: Economic behavior of sectors (Income distribution among actors, Local employments, Quality and sustainability of employments, Power relations)
Sectors and sub sectors: Transportation: Three wheelers Accommodation: Homestay, Hotels Food & beverages: Traditional foods Activities: Trekking & hiking Service: Guide service, Local products
Outputs: - Investment patterns, saving patterns, access to finance, power dynamics (e.g. price & quality determination power), etc.
Indicator 5: Attraction management
Sector and sub sectors: Attractions including waterfalls, mountain, trekking sites, camping sites, lakes, traditional villages etc.
Outputs: - Number of visitors by attraction and distribution of visitors among attractions (percentage)

- Total income (entrance fees) by attraction and distribution of income among attractions (percentage) - Total employments by attractions and distribution of employments (as percentage) - Income distribution by operating parties - Types of visitor facilities, condition and capacity compared to the number of visitors - Safety and security measures available - Partnerships and communication with other stakeholders for visitor attraction and services

Socio Cultural Analysis:

Indicator 1: Women & youth participation
Sector and sub sectors: Accommodation Sub sectors: large hotels Guest houses Homestay Food & Beverages Sub sectors: restaurants Transport Sub sectors: Three wheelers Services Creative industries/guide service
Outputs: - Direct employments (as a percentage to the sub sector employments) - Indirect employments in the supply chains (as a percentage to the total of the considered supply chain)

- Livelihood opportunities (as a percentage to the total community connected to the tourism industry)
Indicator 2: Support for preservation of culture, knowledge, skills and lifestyle
Sectors and sub sectors Activities Sub sectors: Village tours (Memure) Sector: Food & Beverages Sub sector: Traditional foods
Outputs: - Number of families adding values through traditional culture, knowledge and lifestyle - Percentage of value addition to the sub sectors through traditional culture, knowledge and lifestyles
Indicator 3: Support to improve quality of life
Sector and sub sectors Accommodation Sub sector: Homestay Sector: food & beverages Sub sector: Traditional foods Sector: Services Sub sector: guides, local products
Outputs: - Change of income of families - Change of investments/assets of families - Percentage of actors who have decent house condition (Permanent and finished) - Percentage of saving out of total earning - Percentage income spent on recreational facility

- Availability (percentage of actors) alternative income sources
Indicator 4: Drug abuse
Sector and sub sectors Accommodation Sub sectors: Homestay
Outputs: - Cases of drug addiction of community people (change/trend of reported cases) - measured through recorded cases - Negative comments (feedback) on drug abuses received by the visitors
Indicator 5: Risk potentials
Sectors and sub sectors: Attractions Sub sectors: Hiking, trekking, water falls
Outputs: - Change/trend of recorded accidents
Indicators 6: Conflicts
Sectors and sub sectors: Attractions, Accommodation (homestay)
Outputs: - Trend/how often (increase/decrease) of recorded cases of conflicts among visitors and local communities
Indicator 6: Pressure on resources
Sectors and sub sectors: Attractions
Outputs:

- Number of families/villages under inconvenience of natural resource use (bathing, road use)

Environmental Analysis:

Indicator 1: GHG emission
Sector: Transportation
Outputs: - Total no. of vehicles by type (Emission of GHGs)
Indicator 2: Energy
Sector: Accommodation and F&B
Outputs: - Total energy use by the tourism sector
Indicator 3: Water
Sectors: Accommodation and F&B
Outputs: - Total volume of water used by the accommodation actors
Indicator 4: Solid waste
Sector: Accommodation and F&B
Outputs: - Volume of solid waste generated by hotels & other accommodation places
Indicator 5: Wastewater
Sector: Accommodation and F&B
Outputs: - Volume of wastewater generated (% of total water used), - Volume of wastewater treated (% of total

Enabling Environment Analysis:

Indicator 1: Enabling environment
Sectors: Attractions, activities Trekking/hiking
Outputs: Visitors’ awareness and orientation
Indicator 2: Actors/ Environmental pressure created by the actors and suppliers (a major part of this analysis is covered with the hotspot analysis)
Sectors: Accommodation (hotels,) Services Mobile sellers Activities Trekking, Hiking
Indicator 3: Availability of management systems related to the environment conservation. (Percentage of the total accommodations)
Indicator 4: Authorities’ strength of organizational environment
Outputs: - Availability of policies and regulation to control potential damages - Conservation matters/potential damages not covered by regulations - Practice of policies and regulations at the destination - Available benchmarks (bio diversity, threaten species etc.) of conservation - Resource allocation for conservation - Monitoring of environmental wellbeing
Indicator 5: Facilitation of the actors and visitors to minimize environmental risks/enhance benefits (awareness/monitoring/staff allocation etc.) **Outputs:** - Available plans related to conservation - Budget requirements and allocations

- Deficit if any - Impact of budget limitations if any - Human resource allocation and limitations if any
Indicator 6: Physical facilities available to minimize environmental damages Directions and guide facilities available for visitors **Outputs:** - Partnership arrangements with CSOs for management and conservation - Impact of human resource limitations

3.4 Data Collection

Wider group of stakeholders participated in the data collection to represent all value chain sectors, supply chains, agencies and visitors. A questionnaire survey was administrated separately for data collection from direct actors of value chain sectors and visitors of the destination. Attraction management, agencies (regulatory organizations, associations, facilitators, voluntary groups etc.) and key informants also contributed to the data collection process through KIIs and FGDs.

The following table presents stakeholders contributed for the data collection.

Table 4 Respondents to the data collection

Sector	Sub sector	Sample
Transport	Three wheelers	22
	Hired Van	8
	Large Coach	0
Accommodation	Hotels and Gest houses	13
	Homestay	10
	Bungalow	2
	Dormitory	1
	Camping	4
Food & Beverages	Traditional Foods (Homes)	10

	Restaurants	8
	Helabojun	1
	Mobile Sellers	5
Tourism Activities	Tracking & Hiking	4
	Adventure experience	2
Services	*Kithul* based products	3
	Handicraft	2
	Guides	3
	Focus Group Discussion (FGD)	No of participants
	Guide Association- CP	15
	Sembuwatta Elkaduwa Plantation Tourism Project	5
	Pitawala Pathana RFO Office	4
	Denston RFO Office	3
	Community Leaders Meemure Temple	6
	Knuckles Key Informants	4
	Village Community	
	Meemure	10
	Heeloya	7
	Rathkinda	9
	Pitawala	15
	Babarakiriella	6
	Elkaduwa Estate Community	4
	KIIs with Government and Privet Sector Organizations	
	Raththota Pradesiya Saba	2
	Laggala pradesiya Saba	1
	Laggala DS Office	1
	Department of Tourism Development-CP	2

SECTION IV
VALUE CHAIN ANALYSIS

4.1 Introduction

Knuckles range is one of the environmentally as well as socio-culturally significant area in the Island where the aesthetic and ecological value is immense. Diverse ecological system and the traditional way of life of communities are key attractions for visitors from different parts of the world. The relevance and value of tourism to the prosperity of communities and economies have long been recognized. However, there is dearth of studies linking the tourism industry performance to the reciprocal value creation to the ecology and communities resulting the destination competitiveness. Using both quantitative and qualitative assessment techniques the value creation from tourism was examined for Knuckles region.

All key attractions in the Knuckles range were taken into consideration in this analysis. Such as Reverston, Pitawala Pathana, Sera Ella, Bambarakiri Ella, Sembuwatta, Hunnasgiri waterfall, Meemure (located in Matale administrative districts) and Deenston, Heeloya, Rathna Ella (located in Kandy administrative districts). Knuckles is a conservation forest governed by the Department of Forest Conservation. Most attractions are managed/controlled by the Department of Forest Conservation while other attractions are managed by the estate sector.

Generally, the value creation system of tourism is comprised of six major sectors; Transportation, Accommodation, Food & Beverages, Tourism Activities, Attractions and Services and several sub sectors. Value created by the sectors is identified as first level or direct value creation. The supply chains connected with each sector generates a value to the total value of tourism. Sectors and sub sectors offer different products or services in the tourism market to meet the visitor' expectations.

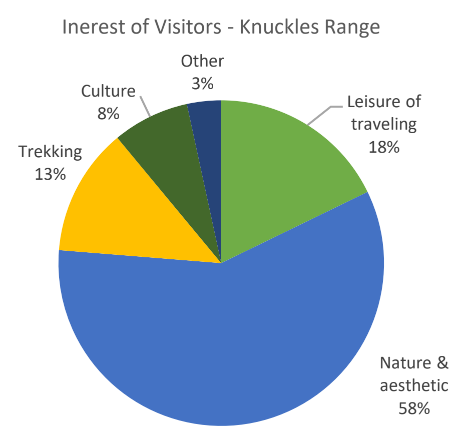


Figure 5 Interests of Visitors - Knuckles Range

Visitors of Knuckles: The visitor survey results depict that although a sizable segment of the visitors fulfills their travel and leisure needs, a majority of visitors select Knuckles as a destination to experience nature. The figure 05 shows different priorities of visitors to visit Knuckles.

4.2 Number of Visitors by Attraction

Estimated annual visitors by major attractions is give in the table 05 bellow. There are attractions where free entrance is allowed – e.g., Bambarakiri Ella, Sera Ella, Heel Oya, Meemure while an entrance fee is charged by the respective managing agency at other attractions e.g., Reverston, Pitawala Pathana, Sembuwatta, Hunnasgiri fall and Deenston. A higher number of visitors arrive annually to open entrance waterfalls mainly for bathing. Sembuwatta, religiously unique place has been able to attract many foreign visitors. Meemure located at the east of the Knuckles range is popular among local visitors who seek trekking experience and the traditional village culture.

Figure 06 illustrate analysis of attractions where respondents (i.e., visitors) traveled. Reverston and Mini world's end are two locations where visitors have selected. Pattern of visitor by locations does not coincide with visitor survey findings mainly owing to the independent nature of different attraction clusters. Some have only visited one of the two independent clusters, Sembuwatta or Meemure. The visitor survey primarily focused the Reverston cluster.

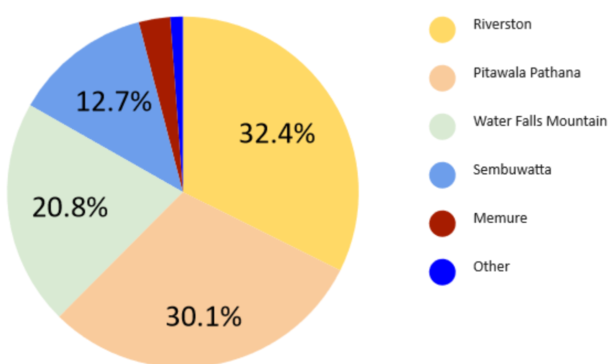


Figure 6: Preferred attraction

Table 5 Visitors by attractions

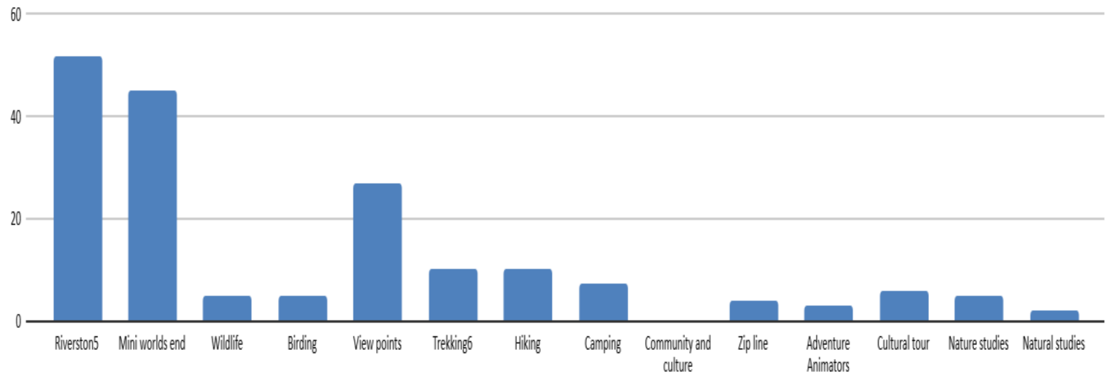
Visitors	Sembuwaththa	Deenston	Reverstion & Pitawala Pathana	Bambarakiri Ella	Sera Ella	Hunnasgiri Water Fall	Heeloya	Meemure	Total
Local	24,000	2,000	39,181			24,000			
Foreign	8,000	300	235			8,000			
Local -open entrance (estimated)				32,000	48,000		50,000	56,600	
Foreign -open entrance (estimated)							2,200	600	
Total	**32,000**	**2,300**	**39,596**	**32,000**	**48,000**	**32,000**	**52,200**	**57,200**	**295,296**
Percentage	11%	1%	13%	11%	16%	11%	18%	19%	

Source: Author compiled data

4.3 Visitors by Activities

Visiting Reverston and mini–Worlds' End is a priority of many visitors. Viewpoints, camping and trekking are popular activities. Large crowds gather at waterfalls for swimming and bathing and access to many of these locations are free. Bambarakiri Ella and Sera Ella are two popular such attractions where big crowd of visitors arrives.

Figure 7 : Mostly participated activities



Source: Author compiled data

The following table presents visitor distribution among different activities. In course of value creation, trekking and camping are major activities contributing to revenue generation. However, a large number of visitors enjoy bathing at waterfalls and water sliding which are entrance free activities.

Table 6 Visitors by activities

Attraction	Activity											
	Trekking	Camping	Nature Study	Free Shooting and Film	Bathing	Adventure	Water sliding	Village Tour	Natural Swimming Pool	Cooking/Food Preparation	Boat Riding	Total
Reverstone	9,000	72,00	24	150	96,000	-	-	-	-	-	-	**112,374**
Bambarakiriella				600	144,000	1,350						**145,950**
Memure	27,000	21,600					96,000					**144,600**
Heeloya	6,000				72,000			300				**78,300**
Sembuwatta											9,000	**9,000**
Hunnasgiri Water Fall					27,000					13,500		**40,500**
Deenston		720										**720**
No of Visitors	**42,000**	**28,000**	**24**	**750**	**312,000**	**1,350**	**96,000**	**300**	**27,000**	**13,500**	**9,000**	**530,724**
Percentage to the total activity visitors	8%	4%	0%	0%	64%	0%	18%	0%	0%	3%	2%	

Source: Author estimated data

4.4 Value Chain Map

The Value Chain map of Knuckles tourist industry elaborates the six main sectors along with its sub sectors (figure 08) The map draws the supply chains of each subsector and the agencies or service providers closely connected with the major sectors.

Sector – Transportation: Three-wheeler operators are a major sub sector largely for local operators. Other types of transport modes include, vans, coaches, cars mostly from outside operators or own transport modes. The majority uses hired transport for Knuckles visit.

Sector – Accommodation: The sector includes manly classified hotels, boutique hotels/villas, guesthouses and homestays. Homestay accommodation is an important sub sector where local actors are largely engaged. A sizable fraction of the guesthouses is also operated by local holders. Almost all hotels and majority of boutiques hotels/villas are outside investments.

Sector - Food & beverages: This sector includes traditional food, restaurants, street shops and *Helabojun* as sub sectors. The restaurant is the largest sub sector in food and beverages while the traditional food sub sector remains the second largest sub sector. The traditional food operators cater mainly local groups who arrive for experiencing trekking and village tours. Except in the restaurant sub sector the presence of local actors is dominant in other all sectors – traditional foods, street shops and *Helabojun*.

Sector – Tourism activities: The major tourism activities available are, camping, trekking, boat riding, village tour, nature explore, photography and motorbike rides. Of which camping and trekking generate higher revenues compared to the others. Camping is operated by different actors such as people in the community, hotel operators, estates and Dept. of Forest. Trekking is mainly operated by site guides, community and chauffer guides.

Sector – Services: Guide service, sales of local products (*Kithul*, spices), handicraft, grocery, toys and garments are the available subsectors. The largest sub sector in terms of value creation is guide service. Local products and handicrafts also generate a sizable revenue for operators or actors.

Sector – Attractions: Knuckles is rich in nature-based attraction sites. The study included key attractions with considerable visitor arrivals and natural value. Most of the attractions are governed by the Dept. of Forest whereas estate sector also manages some important attractions such as Sembuwatta. Attractions freely accessible (free entrance) for visitors such as Bambarakiri Ella are also available. Hunnasgi Falls, Sera Ella, Rathna Ella and Bambarakiri Ella are crowded waterfalls as it has easy vehicle access compared to other waterfalls in the range. Meemure is also a popular attraction which offers traditional village experience, trekking and camping mostly for local visitors.

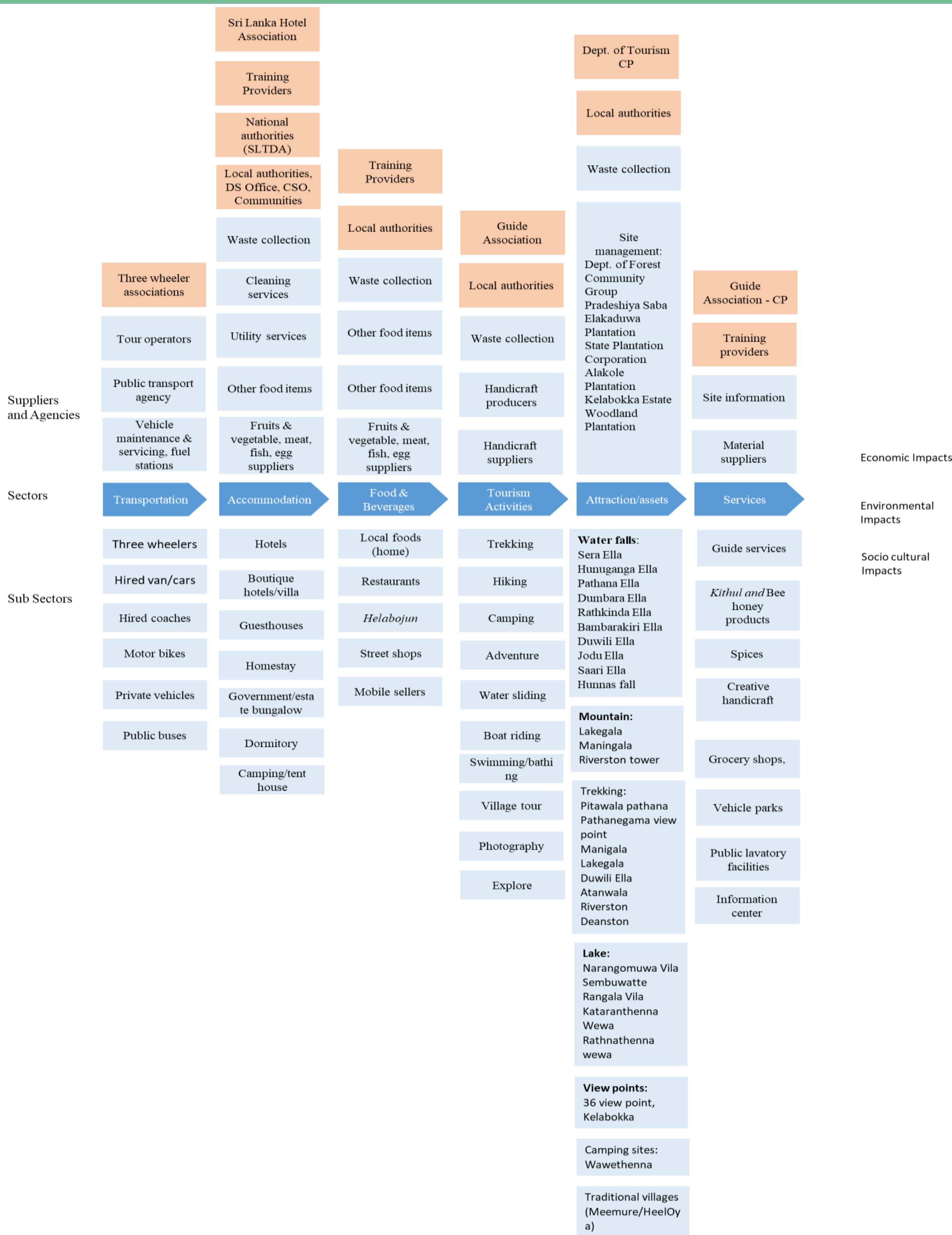


Figure 8: Value chain map – Knuckles range tourism

4.5 Major Sectors and Sub Sectors: Overview

An overview of the statistical distribution of total actors, local actors, total employments, and local employments is given below. In terms of number of actor involvement, accommodation and food & beverages sectors are equally larger sectors. The Sector accommodation is excessively compared to other sectors in terms of total value creation. Food & beverages sector also accommodates a sizable employment.

Table 7 Overview of Sectors and Sub Sectors

Cluster	Sector	Sub sector	Approximate number of actors	Local Actors	Local Employment	Total Employment
Reverston and Pitawala Pathana	Transport	Three wheelers	30	30	30	30
		Hired Van	0	0	0	0
		Large coaches	0	0	0	0
	Accommodation	Hotels	3	0	36	90
		Boutique Hotels	19	8	48	95
		Guest House	24	18	78	112
		Homestay	17	17	17	17
		Circuit Bungalow	1	0	0	1
		Lodge	1	0	0	1
	F & Beverage	Traditional foods (Homes)	15	15	15	15
		Restaurants	16	10	34	64
		Helabojun	2	2	20	20
		Mobile Sellers/Street Food	68	68	68	68
		Fruit & Vegetable Sellers	5	5	5	5
	Tourism Activity	Trekking	15	15	15	15
		Camping	12	12	12	12
		Nature Studies	1	0	0	2
		Free Shooting & Film	1	1	1	2
		Bathing		0	0	0
		Adventure	1	1	1	2
		Guide Service	50	5	5	50

	Services (Including Creative Industries)	*Kithul* Products	25	25	25	25
		Handicraft	2	2	2	2
		Cardamom	1	1	1	1
		Jessy & Toys	1	1	1	1
		Laksha	2	2	2	2
	Attraction	(Given bellow separately)				
Sembuwaththa	Transport	Three wheelers	100	100	100	100
		Hired Van	0	0	0	0
		Large coaches	0	0	0	0
	Accommodation	Hotels	2	0	24	60
		Boutique Hotels	5	3	13	25
		Guest House	20	14	54	80
		Circuit Bungalow	1	0	0	1
	F & Beverage	Restaurants	3	2	9	12
		Mobile Sellers/Street Food	5	5	5	5
	Tourism Activity	Natural Swimming Pool	1	1	0	0
		Food Preparation	1	1	5	5
		Boat Riding	1	1	3	3
	Attraction	(Given bellow separately)				
Heeloya	Transport	Three wheelers	10	10	10	10
		Hired Van	0	0	0	0
		Large coaches	0	0	0	0
	Accommodation	Hotels	3	0	36	90
		Boutique Hotels	12	6	30	60
		Guest House	10	8	27	40
		Homestay	10	10	10	10
	F & Beverage	Traditional foods (Homes)	10	10	10	10
		Restaurants	4	3	10	16
		Mobile Sellers/Street Food	5	5	5	5
	Tourism Activity	Trekking	10	10	10	10
		Bathing		0	0	0
		Village Tour	1	1	3	3
	Services (Including Creative Industries)	*Kithul* Products	15	15	15	15
	Attraction	Village CBO			0	0
Meemure & Deenston	Transport	Three wheelers	5	5	5	5
		Hired Van	0	0	0	0
		Large coaches	0	0	0	0
	Accommodation	Hotels	2	0	24	60

		Boutique Hotels	10	4	28	50
		Guest House	15	10	40	60
		Homestay	25	25	25	25
		Circuit Bungalow	1	0	0	1
		Lodge	1	0	0	1
	F & Beverage	Traditional foods (Homes)	50	50	50	50
		Restaurants	10	5	25	40
		Mobile Sellers/Street Food	15	15	15	15
	Tourism Activity	Trekking	30	30	30	30
		Camping	12	12	12	12
		Water Sliding		0	0	0
	Services (Including Creative Industries)	*Kithul* Products	15	15	15	15
	Attraction	(Given bellow separately)				
	Total		**732**	**614**	**1,063**	**1,556**

Attractions: Knuckles range is a larger forest cover spread over 8 divisional secretariate divisions. The majority of attractions are located within the forest cover governed by the department of forest conservation. Reverston and surrounding attractions could be considered as the prime cluster where number of attractions and activities are associated. Also, Sembuwatta and Hunnasgiri fall – Deenston and Meemure are other clusters.

Table 8 Overview of attractions

	Attractions/Assets	Operating Agency/Actor	Total employments	Local Employments	Visitor facilities	Activities
1	Waterfalls					
	Sera Ella	Forest Department	0	0	No Toilet facilities. No parking facilities	Bathing Camping
	Hunuganga Ella	Forest Department	0	0		
	Pathana Ella	Forest Department	0	0	No toilet facilities.	Bathing
	Dumbara Ella	Forest Department	0	0	No toilet facilities. No parking facilities	Bathing

	Attractions/Assets	Operating Agency/Actor	Total employments	Local Employments	Visitor facilities	Activities
	Rathkinda Ella	Forest Department	0	0	No toilet facilities. No Parking facilities	Bathing
	Bambarakiri Ella	Belongs to Rattota local government territory	0	0	No toilet facilities. No Parking Facilities.	Bathing. Wedding shooting
	Duwili Ella	Forest Department	0	0		
	Saari Ella	Forest Department	0	0	No toilet facilities. No Parking Facilities.	Bathing. Wedding shooting
	Hunnas fall	Hunnasgiri Estate	6	6	Toilet Facilities available. No parking facilities.	Cooking Facility. Swimming in natural Pool.
2	Mountains					
	Lakegala	Forest Department	0	0	Parking facilities in Meemure. Tracking from Meemure to lakegala	Guide services. Food and accommoda tion. First Aid facilities
	Maningala	Forest Department	0	0	Parking facilities are available in Atanwala. No Toilet facilities.	Guide services and Camping facilities are available
	Reverston tower	Forest Department	2	2	Parking facilities and toilets facilities are available.	
3	Trekking					
	Pitawala pathana	Forest Department	3	3	Parking facilities and toilets facilities are available.	Guide Services
	Pathanegama view point	Forest Department	0	0		Guide Services
	Manigala	Forest Department	0	0		Guide Services

	Attractions/Assets	Operating Agency/Actor	Total employments	Local Employments	Visitor facilities	Activities
	Lakegala	Forest Department	0	0		Guide Services
	Duwili Ella	Forest Department	0	0		Guide Services
	Atanwala	Forest Department	0	0		Guide Services
	Reverston	Forest Department	2	2	Parking facilities and toilets facilities	Guide Services
	Deanston	Forest Department	3	-		Guide Services
	Kirimetiya Kanda	Forest Department	0	0		Guide Services
	Pathan ella , Punchi lokanthaya, Walpalamulla village	Forest Department	0	0		Guide Services
	Thangappuwa Nuckels	Forest Department	0	0		Guide Services
4	**Lakes**					
	Sembuwatte	Elkaduwa Plantation	15	15	Toilet and vehicle parking available.	Boat Riding, Natural swimming pool,
	Narangomuwa Vila		-	-		
	Rangala Vila		-	-		
	Kataranthenna Wewa		-	-		
	Rathnathenna wewa		-	-		
5	**View points**					
	36 view point,		-	-		
	Kelabokka	Kelebokka Estate	-	-		
	Camping sites					
	Wawethenna		-	-		
6	**Traditional villages**					

	Attractions/Assets	Operating Agency/Actor	Total employments	Local Employments	Visitor facilities	Activities
	Meemure	Belongs to Ududumbara local government territory	-	-		Trekking Camping Homestay Traditional foods Water sliding
	Heeloya	Belongs to Medadumbara local government territory	-	-		Trekking Homestay Traditional foods Traditional village experience

4.6 Supply Chains

Identification of supply chain actors is important to segregate local value creation in the value chain. Based on the prominent connectivity of local supply chains, the study selected accommodation and F&B sectors were mainly selected for this supply chain analysis Given below are the few commodities the analysis focused.

Sector and sub sectors	Supply types	Supply chain
Accommodation	Fruits and vegetables Meat Fish Eggs	Hotels (luxury hotels, boutique hotels and guest houses): sourcing of fruits and vegetables locally is negligible. Operators source fruits and vegetables from vegetable stalls in Rattota or Matale. Fruits and vegetable sellers depend mostly on Dambulla market for their supplies while around 20% of the total circulation is sourced locally.

		Homestay: who offer meals sourced fruits and vegetable locally. However, this volume is not significant in the value creation process. Meat, fish and eggs are coming to the stalls from outer region. Only around 10% of chicken supply of the stalls is accommodated by local producers. Hotels thrust mostly on known brands for chicken whereas fish and other sea foods are purchased from stalls in Rattota or Matale.
	Cleaning_ Laundry service	Laundry service is identified as a regular supply of accommodation sector specially connected with large hotels and guest houses. Two operators are found in Rattota and Matele.
Food & beverages	Fruits and vegetables Meat Fish Eggs	Homemade meals (local food) is the major sub sector of food & beverages. Around 40% of the vegetable and rice requirement is sourced from local cultivation (self-produced or within the community). The other major materials (meat, fish, eggs etc.) are purchased from sources where outside actors/producers supply products.
Services	*Kithul* products	*Kithul* treacle and jaggery are two products sold at street shops and other outlets/groceries. Local people engage in supply chain of *Kithul* products totally. Sap production remains as the major supply which is done by approximately 55 people scattered around villages of attractions.

	Handicrafts	Only few handicraft producers are offering products to the visitor market. Production is done using locally available raw materials collected locally but there are no many people engaged in supply or there is no significant value creation by suppliers.

4.7 Analysis of Local Economic Contribution Sector Performance and Marketing

4.7.1 Total Value Creation

Estimation of the total value creation of the Knuckles tourism was an essential requirement of the value chain analysis. The illustration below (figure 7) outlines, the value of each sub sector under each major sector and the total value creation of the value chain along with the value distribution among the six sectors and its sub sectors. Based on this estimation the total value creation of the value chain is around 1.5 billion

LKR

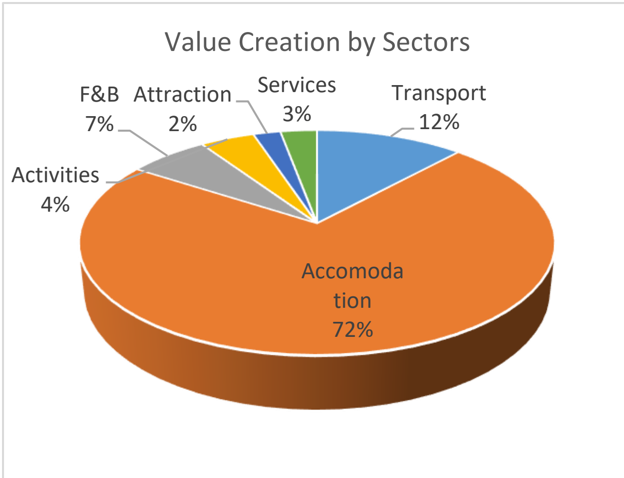
	Transport	Accommodation	F&B	Activities	Attraction	Services	Total
Employments	137	799	325	94	41	111	1507
Sector	Transport	Accommodation	F&B	Activities	Attraction	Services	Total
Value (LKR)	178,124,000.00	1,086,169,200.00	96,364,000.00	65,596,000.00	32,773,100.00	43,960,000.00	1,502,986,300.00
Percentage	12%	72%	6%	4%	2%	3%	100%

Sub Sector / Value (LKR) / Percentage	Transport	Accommodation	F&B	Activities	Attraction	Services
Sub Sector	Large Coach	Hotels	Restaurants	Tracking	Riverston & Pitawala	Guid Services
Value (LKR)	51,600,000.00	720,000,000.00	40,200,000.00	6,400,000.00	2,413,100.00	32,000,000.00
Percentage	29%	66%	42%	10%	7%	73%
Sub Sector	Van	Boutique hotels/villa	Local Food	Camping	Dinston Estate	Kithul Product
Value (LKR)	107,880,000.00	189,273,600.00	26,520,000.00	48,480,000.00	360,000.00	8,800,000.00
Percentage	61%	17%	28%	74%	1%	20%
Sub Sector	Three Wheel	Guest Houses	Street Food	Nature Study	Sembuwatta	Handicraft
Value (LKR)	18,644,000.00	118,389,600.00	27,420,000.00	256,000.00	24,000,000.00	840,000.00
Percentage	10%	11%	28%	0.39%	73.23%	2%
Sub Sector		Homestay	Hela Bojun	Free Shooting and Film Shooting	Hunnasgiri water Fall	Spices
Value (LKR)		42,384,000.00	1,024,000.00	340,000.00	6,000,000.00	1,200,000.00
Percentage		4%	1%	0.52%	18.31%	3%
Sub Sector		Sercuit Bangalo	Fruit&Veg. Sellers	Adventure		Grocery
Value (LKR)		10,782,000.00	1,200,000.00	720,000.00		320,000.00
Percentage		0.99%	1.25%	1.10%		1%
Sub Sector		Lodge		Bathing and Water Sliding		Laksha Products
Value (LKR)		5,340,000.00		-		800,000.00
Percentage		0.49%		0.00%		2%
Sub Sector				Village Touer		
Value (LKR)				400,000.00		
Percentage				0.61%		
Sub Sector				Boat Riding		
Value (LKR)				9,000,000.00		
Percentage				13.72%		
Sub Sector				Bathing in Natural Water pool		

Figure 9 Value creation by sectors and sub sectors

In broad sense the sector performance is conceptualized through the lenses of destination competitiveness based on the assumption that the level of performance of each sector determines the destination competitiveness. The sector performance was examined through the model conceptualized using destination competitiveness as the dependent variable where target market and sector performance were used as independent variables. Further, target market was measured using visitor preferences and visitor satisfaction.

Similarly, the sector performance was measured using the attraction of visitors by the value sectors and value created by each sector. Satisfaction level of the visitor examined by, Quality of services, Experience, Facilities, Safety, Support services and Value for money. As the indicators for Visitor preference; Availability of nearby attractions (access, information, accommodation) and Value-added services/products



were operationalized. Time spent in the destination (days), Growth of visitor attraction by sub sectors/value sectors, Income growth by value sectors/sub sectors) and Value-added products were used as indicators for sector performance in this study.

Figure 10 Value Creation by Sectors

The graph above illustrates the summary of the performance of each sector in the value contributes 72 percent and transport sector in 12 percent to the total value. Food and Beverage sector, Activities, service sectors and attractions and contribute 7 percent, 4 percent, 3 percent, 2 percent respectively in the total value creation.

Transportation: Transport is a key need at a destination as it ensures accessibility to potential visitors. The western boarder of Knuckles consisted a railway access to trains that runs from Kandy, Wattegama through Matale and reaches Raththota. Two A class roads namely A9 and A26 and five B class roads namely B 12, B 274, B 275, B 615 and B 641 roads run across Knuckles region.

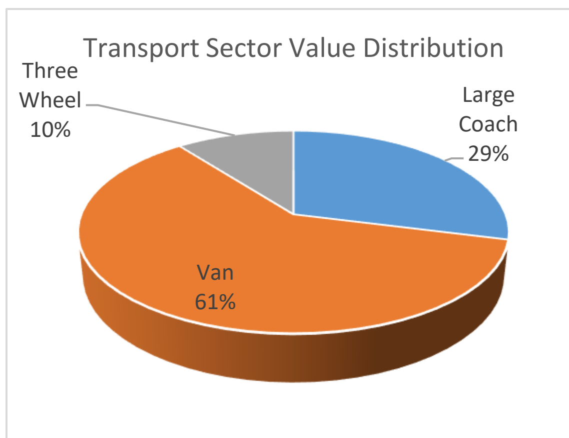


Figure 11: Transport Sector Value Distribution

Local visitors mainly reach the destination through private vehicles to individual sites where public transport was not available. The travel/tour company or the hotel provide taxi services based on demand for foreign visitors. Three - wheelers were emerging as one of the transport modes for both local and foreign visitors.

A large part of the visitors uses vans as their transport mode allowing to create around 60 percent of the transport sector value. Large coaches contribute around 30 percent of the total transport value while three- wheeler sub sector – the only component of local transport system holds 10 percent of the total value creation. First two sub sectors – vans and coaches are totally from outside operators based in Colombo or other cities where visitors are based. (Figure 11)

Accommodation: The most significant sector for value creation in Knuckles tourist region that accounts for 72 percent of the total is the accommodation sector. Figure 12 illustrates that 66 percent of that total comes from classified hotels where 17 percent, 11 percent and 4 percent from boutique hotels, guest houses and homestay respectively

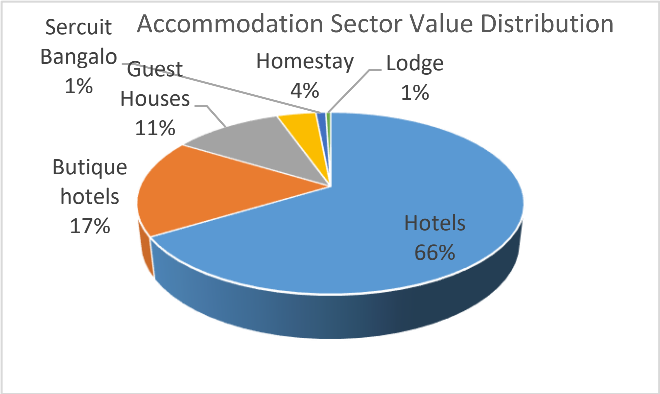


Figure 12 : Accommodation Sector Value Distribution

Food & Beverages: F&B service sector was further subcategorized into five actors namely local food services, street food, restaurants, Hela Bojun and fruits and vegetable sellers – a smaller sub sector. Illustrated below in figure 13, restaurants amount to 42 percent of the total F&B value. Local foods and street foods sub sectors contribute equally to the F&B value contributing 28 percent each. The value contribution of the other two sub sectors is insignificant at present.

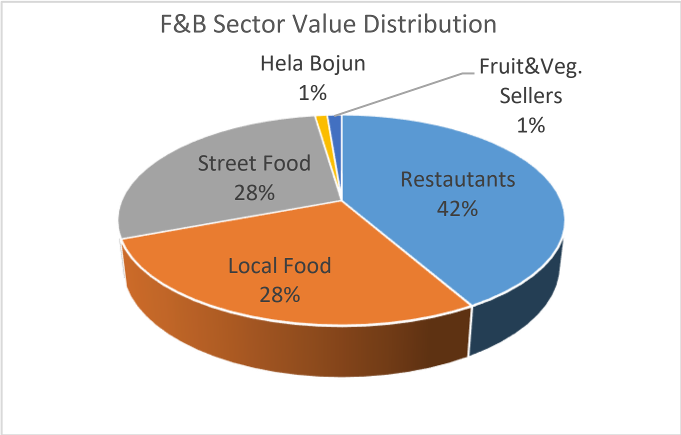


Figure 13 F&B sector value distribution

Activities: The locations observed has a range of activities to offer the tourists. Of which 74 percent towards the total value was contributed by camping. The figure 14 illustrates a 14 percent contribution from Boat riding and 10 percent contribution from Trekking to the total value. Presence of local actors in both camping and trekking is sizable. Boat riding is only aviable at Sembuwatta is operated by the estate sector.

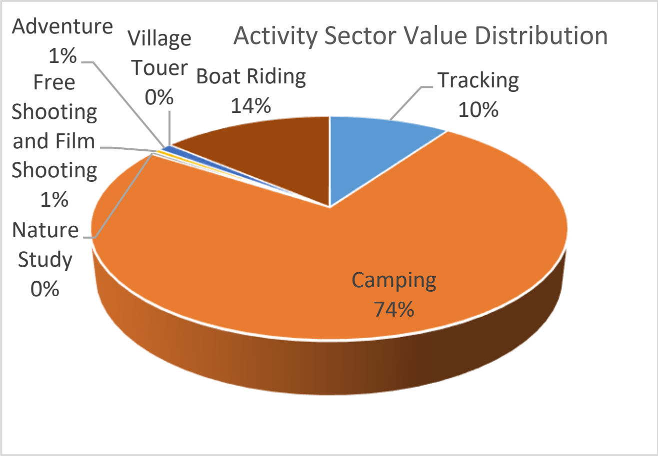


Figure 14 Activity Sector Value Distribution

Attractions: Knucleks tourist region has a wide array of tourist attractions such as waterfalls, mountains, plains, savaana, traditonsl villages, paddy fields and rural life style and so forth. Rivestorn and Pitawala Pathana, Sembuwaththa, Meemure, Heeloya traditonal villages and Dinston estate were among the key attrcations. Majority of the attrcations are in its natural habitat thus, tourists can view and experince the natural setting. Pitawala Pathana has basic faciliites and a mini museum.

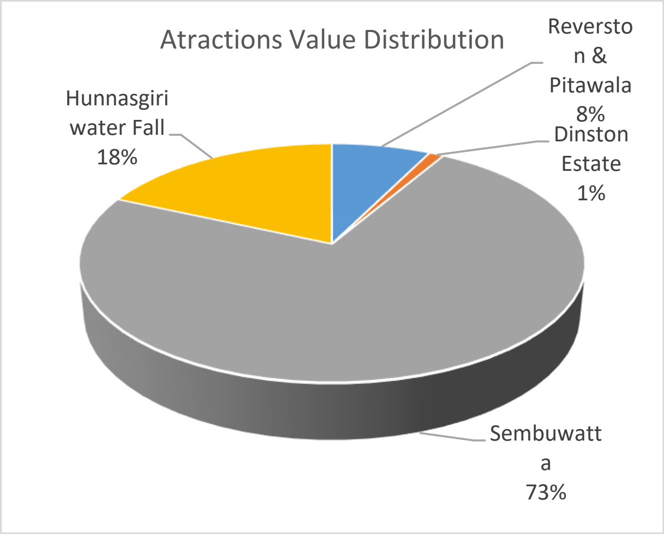


Figure 15 Attractions Value Distribution

The figure 15 illustrates the composition of value created at each attraction. Accordingly, Sembuwaththa created a value of 73 percent, while Hunnasgiri waterfall contributed 18 percent along with 8 percent of the value is created by Reverston and Pitawala Pathana. Sembuwatta and Hunasgiri waterfall are managed by the estate sector and Reverston, Pitawala Patha and Dineston attractions managed by the Department of Forest Conservation.

Services: Under the services category, tour guide service, *Kithul* product sales are prominent. Tour guide service is the most significant item in the value chain where nature, culture, environment, wildlife becomes a key concern when guiding services are provided. (Figure 16)

Tour guide service is offered by National tour guide lecturers, chauffer guides and site guides. Local people are only engaged as site guides.

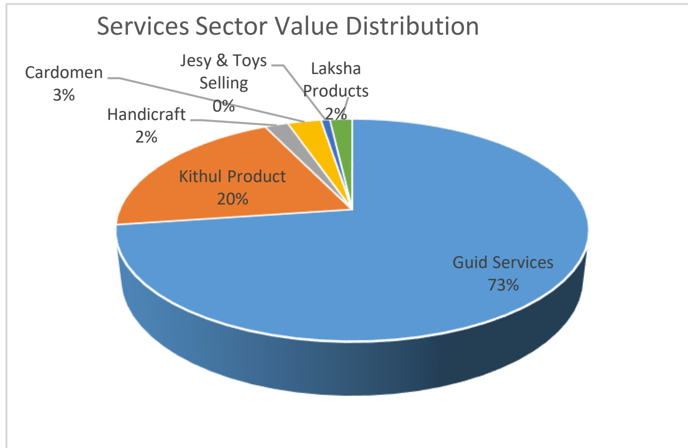


Figure 16 Services Sector Value Distribution

4.7.2 Local Value Creation

It is important to analyze the local value creation in the value chain which shows the current level of local economic contribution towards tourism in Knuckles. Local value creation is estimated for all six sectors and its sub sectors of the value chain. The value creation corresponds to the total revenue generated. Therefore, the revenue generated by the local (residing communities) actors and supply chains is defined as the local value creation.

First, the total value creation is estimated for each sector and sub sector based on the total actors/establishments and revenue generation. Next, the local actors/establishments are identified for this estimation. But the gross local value should be adjusted for goods bought from outside.

Transportation: Only three-wheeler transportation accounts for local value creation. The other modes of transportation – large coaches, vans, cars, mini vans etc. are not operated by actors in the locality. Majority of local visitors arrange transportation at their home town. A sizable fraction of visitors (40%) uses their own vehicles. The following analysis depicts that the gross local value created by the community actors in the transportation sector is low as 11 percent.

Table 9 Local value creation - transport sector

(LKR)

	Total value	Gross Local Value	Gross local value – sub sector percentage	Gross local value – sector percentage
Large Coach	36,600,000	-	0	
Van	107,880,000	-	0	
Three Wheels	18,644,000	18,644,000	100	11%
Total	**163,124,000**	**18,644,000**		

Accommodation: Nearly all homestay operators are local actors that contributes to the total value creation of the sub sector. However, their value contribution within the total accommodation sector is low as 4 percent. Subject to graded hotel sector, the local value creation within the accommodation sector is considerable. The gross local value creation of the total accommodation sector remains around 20 percent.

Table 10 Local value creation - Accommodation sector

(LKR)

Sub sector	Total Value	Gross Local Value	Gross local value – sub sector percentage	Gross local value –to sector percentage
Hotels	720,000,000			0
Boutique hotel/villa	189,273,600	98,265,600		9%
Guest House	118,389,600	82,656,000		8%
Homestay	42,384,000	42,384,000	100	4%
Circuit Bangalow	10,782,000			0%

lodge	5,340,000			0
Total	**1,086,169,200**	**223,305,600**		

Food and Beverages: The following analysis depicts that a larger part of the food & beverages sector and its sub sectors are held by local actors. However, food and beverages sector on its own does not generate higher values compared to the accommodation or transport sectors. Thus, the contribution of food & beverages sector to the total local value creation is low. The value of the food & beverages sector that falls within the accommodation sector is not calculated separately.

Table 11 Local value creation- F&B sector

(LKR)

	Total value	Gross Local Value	Gross Local Value - Percentage
Restaurant	40,200,000	37,800,000	92
Local Foods	26,520,000	26,520,000	100
Street Foods	27,420,000	27,420,000	100
Helabojun	1,024,000	1,024,000	100
Mobile sellers	1,200,000	1,200,000	100
Total	**96,364,000**	**93,964,000**	

Activities: A large part of trekking and camping is contributed by local actors. Camping is the larger contributor in the activity sector. However, the tourism activity sector holds only 4 percent of the total value creation.

Table 12 Local value creation - Activities sector

(LKR)

	Total Value	Gross Local Value	Gross Local Value - Percentage
Trekking	6,400,000	6,400,000	100
Camping	48,480,000	8,320,000	58
Boat riding	9,000,000	-	0
Village tour	400,000	400,000	100
Nature explore	256,000	-	0
Photography	340,000	-	0

Adventure	720,000	720,000	100
Total	**65,596,000**	**15,840,000**	

Services: Although local actors dominated some sub sectors the service sector remains substantially small compared to other sectors (3%) leading to an overall low contribution to the local value creation. Even in the largest sub sector – guide services local community participation is very low.

Table 13 Local value creation - Services sector

(LKR)

	Total Value	Gross Local Value	Gross Local Value - Percentage
Guide	32,000,000	3,200,000	10
Local products	8,800,000	8,800,000	100
Handicraft	840,000	840,000	100
Spice	1,200,000	1,200,000	100
Grocery, toys, garments	320,000	320,000	100
Total	**43,160,000**	**14,360,000**	

Attractions: The local communities do not derive any significant direct benefit from the revenue generation of attractions as all income generating attractions are managed either by the Department of Forest Conservation or the estate sector. These attraction management and operations also have a very low.

Table 14 Local value creation - Attractions

(LKR)

	Local	Gross Local value	Gross Local Value - Percentage
Reverston	24,000,000	-	0
Deanston	360,000	-	0
Sembuwatta	2,413,100	-	0
Hunasgiri water fall	6,000,000	-	0
Total	**32,773,100**		

Value Bought in from Outside: The following analysis presents values of major sectors bought in from outside. Accordingly, nearly 90% of the transport sector depends significantly upon the external supplies. Fuel is the biggest expenditure of the transport sector which accounts for a highest percentage of the total cost. The cost of repair and maintenance in another expenditure that channels outside the region. However, a large part of the value is retained within the region by the activity sector.

Table 15 Value brought in from outside

(Values in LKR million)

Accommodation		F&B		Transport		Activities		Services	
Total	External	Total	External	Total	External	Total	External	Total	External
1,086	691	96.3	42.4	178.1	159.4	65.5	.25	43.9	28.8
External value %		External value %		External value %		External value %		External value %	
64%		44%		90%		0.4%		66%	

4.7.3 Local Value Creation - Supply Chains

One economic analysis indicator is to identify the local value created by supply chains of selected sectors. Since Accommodation and F & B sectors have a comparatively high number of supply chains than other sectors, this analysis prioritized these two sectors. Considering the volume of consumption, the analysis took into consideration the products namely; fruits & vegetables meat, fish, eggs, dairy products, grains and spices for local value estimation.

Accommodation Sector: The analysis below outlines that the local suppliers have captured a sizable market of the Fruits and vegetable supply (32%) whereas the local supplies of materials accommodate only 14 percent of the total value.

Table 16 Local value creation - supply chains of accommodations

(LKR)

	Total	Local	Percentage
Total value – accommodation sector	1,086,169,200		
Supply of materials (total)	315,788,975		
Fruits and Vegetable	62,310,113	19,964,549	32
Fish and Meat	109,678,459	11,476,451	10
Egg	15,789,449	831,856	5
Dairy	16,637,131	1,833,248	11
Dry rations (oats, grains, rice, noodles, canned items)	79,794,926	8,488,098	11
Other (spices, oils)	31,578,898	3,327,425	11

Food & Beverages Sector: As a percentage, local material supplies of F&B are considerable compared to the accommodation sector. Traditional food supply sub sector contributes largely for this increase. Traditional food suppliers depend mainly on locally sourced materials than other sub sectors.

Table 17 Local value creation - supply chains of F&B

(LKR)

	Total	Local	Percentage
Value	96,364,000		
Materials (total)	35,404,200		
Fruits and Vegetable	4,064,640	1,473,984	36
Fish and Meat	7,113,120	1,711,836	24
Egg	1,016,160	50,808	5
Dairy	1,016,160	246,084	24
Dry rations (oats, grains, rice, noodles, canned items)	16,048,800	4,020,720	25

Other (spices, oils)	6,145,320	2,216,928	36

4.7.4 Sector Performance

In a broad sense, the sector performance is conceptualized through the lenses of competitiveness, based on the assumption that the level of performance of each sector determines the destination competitiveness. The sector performance was examined through the model conceptualized using indicators/variables that would contribute largely to improve the quality of service offered and the customer satisfaction met. Further, the target market was measured using visitor preferences and visitor satisfaction. Satisfaction level of the visitor was examined using indicators such as, Quality of services, Experience, Facilities, Safety, Support services and Value for money. The indicators for Visitor preference were; Availability of nearby attractions (access, information, accommodation), Value-added services/products and Time spent at the destination (days). The market orientation and visitor satisfaction were analyzed for sub sectors of accommodation and restaurant sub sector of F&B sector through a visitor satisfaction survey to understand the overall destination competitiveness and performance.

Market Orientation: This is a measurement used to assess aspects such as the sector performance and competitiveness. It was assumed that SLTDA registration is a key indicator which reflects service standards. Service provider may comply to register and maintain the service standards for SLTDA.

Another indicator was trained staff deployed in the service delivery process. Tourism services is primarily human centered and successful customer service is depended on the quality of human resources.

Further, strategies or tools of sub sectors to reach the target market were also assessed. Listing in online platforms (booking.com, TripAdvisor etc.) and use of social media were considered as tools of marketing and market access. The following table outlines the findings of the survey.

Table 18 Standards of Service and practice of marketing tools

Sector/sub sector/supply chain	Indicator
Accommodation Guest houses	SLTDA registration: 5 percent of guest houses are registered under SLTDA Published in online platforms (booking.com, trip advisor): Around 60 percent of guest houses are published in online platforms Trained staff: Only about 20 percent of the surveyed sample deployed trained staff.
Homestay	Percentage of SLTDA registered homestays in the region – less than 1 percent Published in online platforms (booking.com, trip advisor): Around 20 percent of guest houses are published in online platforms. Trained on homestay/tourism: around 75 percent of operators are trained.
Camping sites	None of the camping sites were registered under SLTDA. One camping site operator has forwarded an application for registration but he has not followed up due to unfavorable tourist conditions. Published in online platforms: around 60% have published in online platforms Trained staff: Experienced personnel operate camping but they have not received proper trainings.
Food & beverages	Restaurants: none of the restaurants were registered with SLTDA. Published in online platforms: around 30% have published in online platforms Trained staff: Only few places of food & beverages sub sector (10 percent of the surveyed sample) have recruited trained personnel for important operations such as food preparation and customer services.

Services	Licensed site guides – 10 percent (total number of site guides were 45.) Trained staff: Percentage of skilled community level guides (site guides) – 20 percent They are lacking of guiding skills of foreign visitor handling.

This analysis focused more on accommodation, F&B and services sub sectors where higher number of local actors were found. It contributed in identifying opportunities for higher local value creation and barriers for higher value creation. It is evident based on the above analysis, that local actors are poorly oriented to meet the customer preference and reach markets effectively. Implication of this poor orientation is that they receive lower values than they could undertake. Analysis clearly presents that local stakeholders have been unable to meet service standards in terms of staff and other physical requirements. This argument is further confirmed by the reviews of the visitor survey.

Market accessibility of local actors: In order to function successful tourism enterprises market accessibility a prerequisite. In the case of Knuckles region, a disparity between large scale tourist operators and local small entrepreneurs was clearly evident. Large scale operators were equipped with necessary finances and modern approaches, networks and platforms and international collaboration to access the market. A few local business operators were able to operate their own web sites while the majority had no capacity for such interventions. Despite the available potential, communication with international partners was a key barrier to reach international markets. Therefore, it is advisable to have a competitive yet a collaborative effort together with other operators to market the destination. A well marketed destination would attract sufficient visitors and that ultimately benefit all operators. It was also observed that Department of trade, commerce and tourism of central provincial council has a pivotal role in harnessing all operators to ensure sustainable market access for Knuckles tourism operators.

Visitor Satisfaction and Preference: Visitor survey was conducted to assess customer satisfaction on tourism services and attractions and examine services or areas where customers prefer to experience. Reviews of visitors are sensible for both operators/actors and agencies to revisit their services, activities, programs and policies.

<u>Visitor Preference</u>: The following analysis reveals that majority of the visitors seek to experience nature. A sizable fraction of visitors seeks only traveling experience to a destination. Very few visitors selected knuckles for culture experience. This categorization would be useful for attraction management to design visitor management programs such as awareness of visitors, monitoring mechanisms in cause of destination conservation.

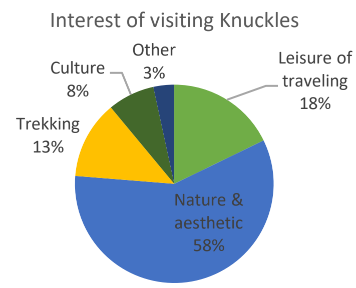


Figure 17 Interest of visiting Knuckles

<u>Repeating Visitors</u>: According to the following graph majority of the visitors are were first time arrivals. However, it is important to notice the fraction of repeating visitors (for second time or more) is sizable. This indicates that there is an emerging loyalty towards the attraction among visitors.

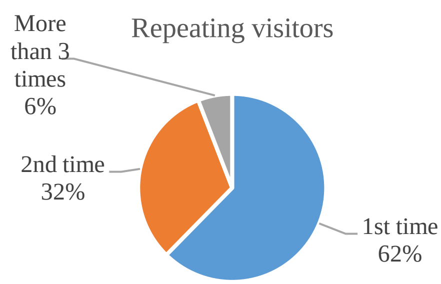


Figure 18 Visitors by number of times visiting

<u>Visitor Preferred Attractions</u>: Distribution of visitor preference is illustrated in the following graph. A larger part of visitors (32%) selected Reverston as a preferred attraction. Pitawala Pathana is also equally popular among visitors while experience of waterfalls follows.

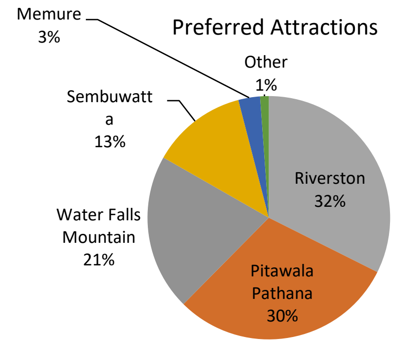


Figure 19 Preferred Attractions

<u>Tour Arrangement</u>: In terms of tour arrangement majority of visitors have made their own arrangements. Knuckles is visited mostly by locals. Only a fraction of visitors arrives through local travel agents or tour operators.

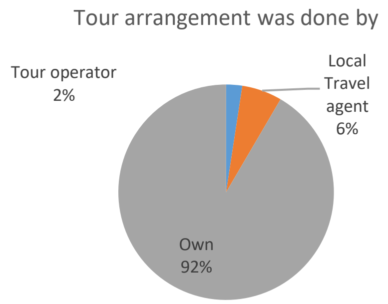


Figure 20 Tour arrangement was done by

Qualiry of accommodation: The quality of the acccommodation as perceived by visitors was moderate. According to the following graph 62 percent visitors felt it was good while 24 percent of the visitors responded the quality of accommodation was moderate, 11 percent claimed that it was very good and 3 percent stated the quality was poor.

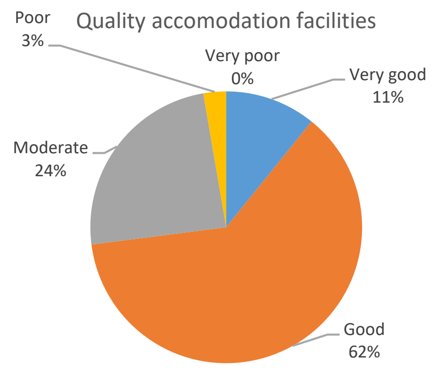


Figure 21 Quality accommodation facilities

Quality of F&B: Quality of food at the Knuckles destination region was reported as good by 74 percent of the visitors. The graph illustrates 20 percent noting the food quality being moderate, 5 percent claiming it was very good and one percent said it was poor.

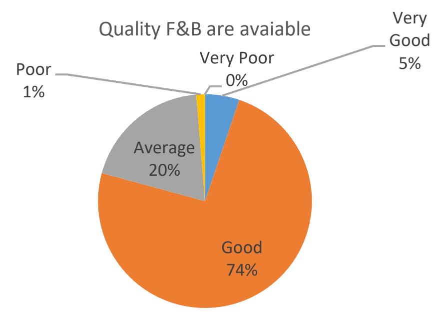


Figure 22 Quality F&B

Safety and Security: As per the safety and security the destination sites 49 percent of the visitors felt good while another 48 percent visitors viwed very good follwed by 3 visitors responded moderate safety.

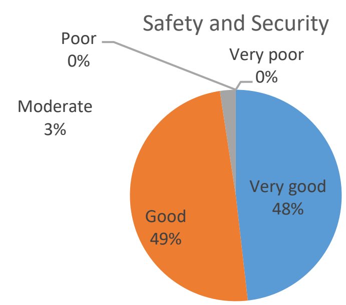


Figure 23 Safety and Security

Clean Environment: With reference to maintaining a clean environment at tourist sites in Knuckles region 63 percent of the visitors felt it was good while 35 percent of the visitors viewed maintaining a clean environment is very good ant Knuckles sites.

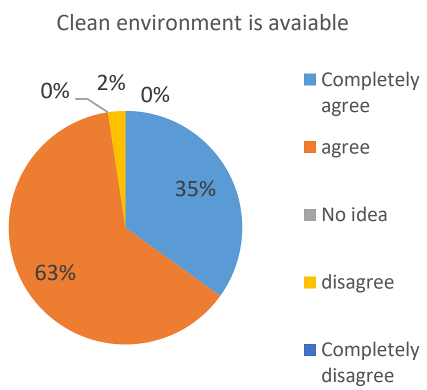


Figure 24 Clean environment is available

Sanatory and Comfort Facilities: At the Knuckles destination 49 percent of the visitors claimed there was poor sanitary and visitor comfort facilities while 27 percent of the visitors stated that the sanitary and comfort facilities were developed.

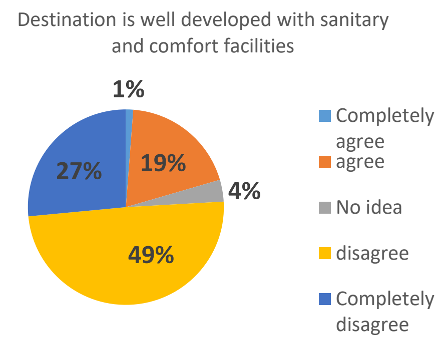


Figure 25 Destination is well developed with sanitary and comfort facilities

Satisfaction of Services: The next section examines the visitor satisfaction of the facilities, services and tourist sutes. The graph illustrates that 56 percent claimed satisfacion with regrad to the skill of the tour guides wehre as 39 percent stated very good and moderate.

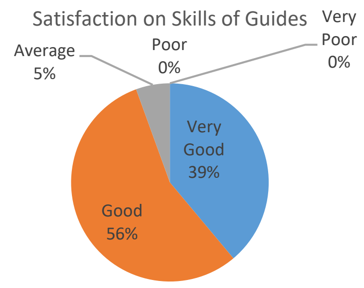


Figure 26 Satisfaction on Skills of Guides

Visitor Management: The following observations were made in terms of well-organized visitor management at destinations in Knuckles. The graph illustrates that 55 percent of the visitors felt visitor management was organized, where as 16 percent viewed it being very good. On the contrary 25 percent of the total visitors surveyed noted moderate visitor management at Knuckles sites.

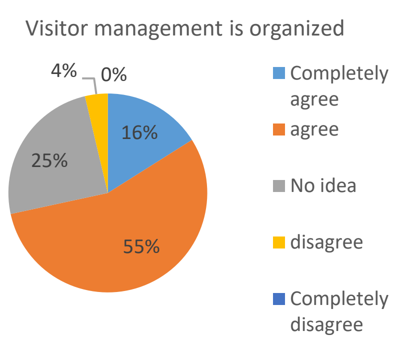


Figure 27 Visitor management is organized

Destination Promotion: The graph outlines that 32 percent of the visitors has no ideas about the way the destination is promoted, as 39 percent viewed it have been well promoted. However, 23 percent of the visitors viewed that destination promotion was poor.

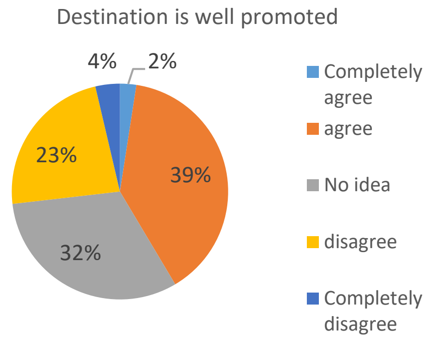


Figure 28 Destination is well promoted

Harassments: The situation of 'harassments to visitors by beggars and venders' was favourable at the Knuckles region. According to the illustration, 65 percent of visitors have not met with any harassments, whereas 15 percent of the visitors viewed harassments being very low. The destination is not yet commercialized as other destinations as such only few vendors are available at Reverston and other attractions.

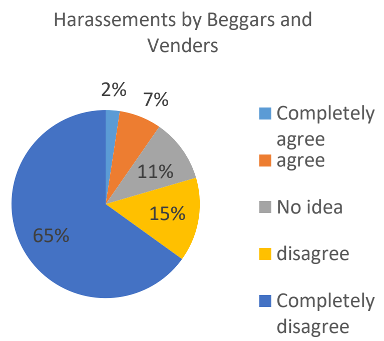


Figure 29 Harassments by Beggars and Venders

Law and Order: As for the maintenance of law and order at the destination Knuckles region performed well as illustrated in the graph below. Accordingly, 39 of the visitors felt maintenance of law and order was good, while 17 percent claimed it is very good. However, 30 percent stated that the support form law and order was moderate, 9 percent did not agree with regard to the claims made on law and order and 5 percent completely disagreed with regard to maintenance of law and order.

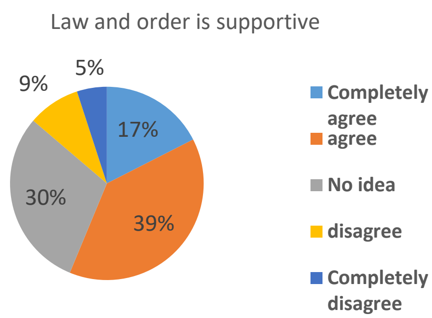


Figure 30 Law and order is supportive

<u>Preffered places of accommodation</u>: Visitors have different preferences of accomodation is illustrated in the figure given below. A majority of visitors preferred Homestay. The groups prefered guesthouse and camp sites respectively. Compared to the hotel accomodation options, lodges were also a prefered accomodation oprtion for visitors.

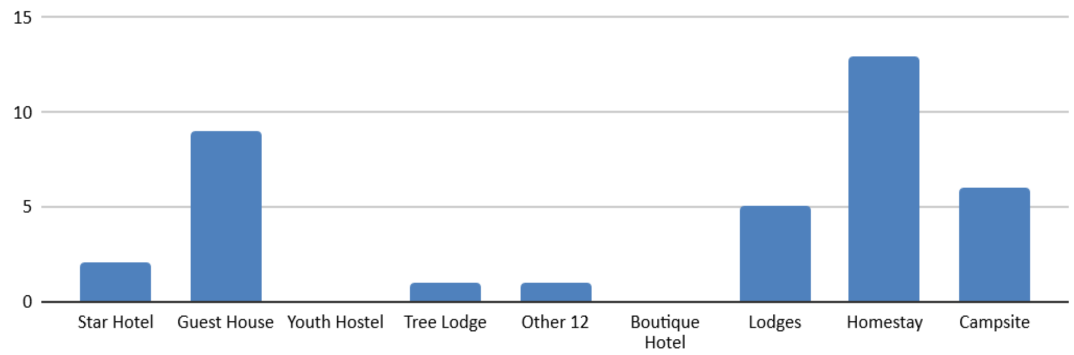


Figure 31 Preferred place of accommodation

<u>Essential Facilities</u>: As illustred in the following figure, visitors seek some services or facilities which are essential for the destination. Visitors felt sanitory facilities and F&B services are essential. However, Sanitory facilities are not avaiable at some attractons.

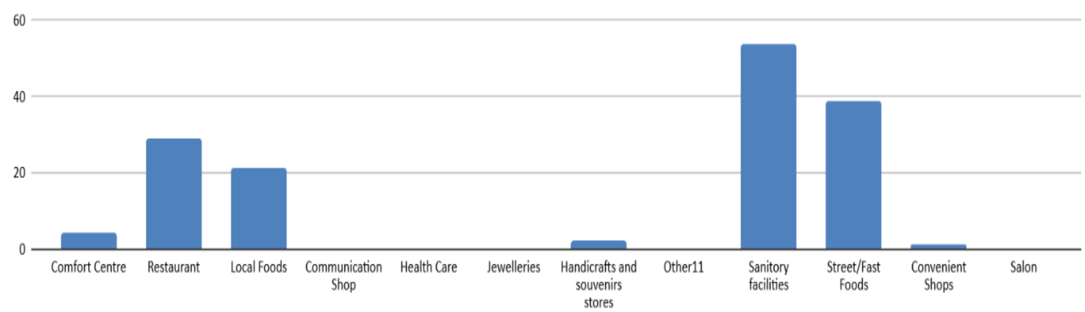


Figure 32 Essential facilities or services

Improvements to add value to the destination: The value creation at the destination could be enhanced further as from the perception of visitors as illustrated below. As visitors perceived more improvements are required for transportation, F&B services, clean environment and sanitary facilities.

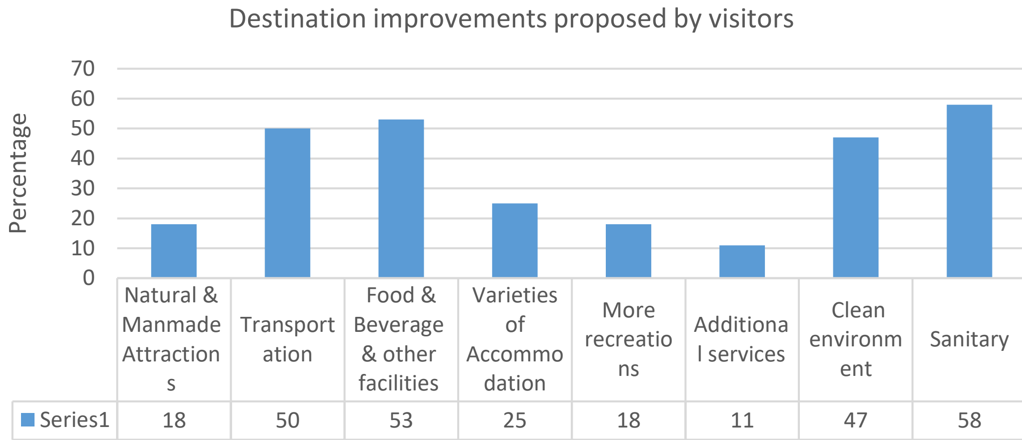


Figure 33 Proposed destination improvements

Visitor satisfaction analysis with regard to accommodation, F&B and tourism activities conveys an important message for both operators/actors and agencies. It is a smaller fraction of visitors who ranked all three services as highly satisfactory. There are many visitors/customers who ranked three services as good to average while a sizable part of visitors seeks services with better quality. Actors may urge service improvement actions based on this ranking.

Spending pattern of visitors is illustrated by the following figure. A larger part of visitors spend below or around Rs. 5,000 for the visit of Knuckles. This price sensitive segment of visitors may automatically seek less expensive options in tourism serices. However, the other two segments are also significant in size and favourable for value added tourism services. Segregation of visitor expenses reveals that a larger part of spending is account for accomodatoin while F&B and transport expenses stand next respectively.

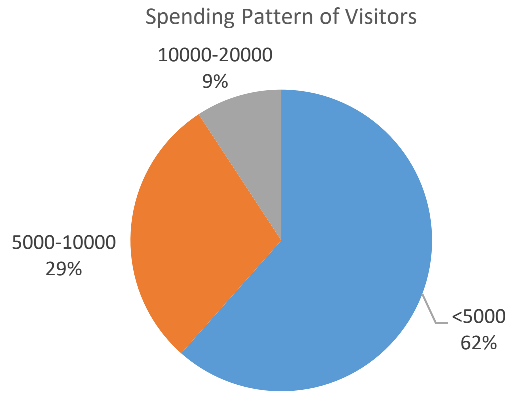


Figure 34 Spending Pattern of Visitors

4.7.5 Human Resources

This analysis mainly focused on opportunities created by different sectors and sub sectors for local people. All six sectors and their key sub sectors were taken for the analysis. For most of the sectors, estimation of total employments and local employments was carried out based on the sample survey. Statistics for employments at the attractions were collected from attraction operators.

Accommodation sector contributes largely for local employment generation both in numbers and percentage of contribution. F&B sector is the second largest contributor towards local employment. Share of self-employment (local foods and street shops) is comparatively high in the F&B sector. Total of the transport sector employment also amounts to self-employment (three-wheeler drivers).

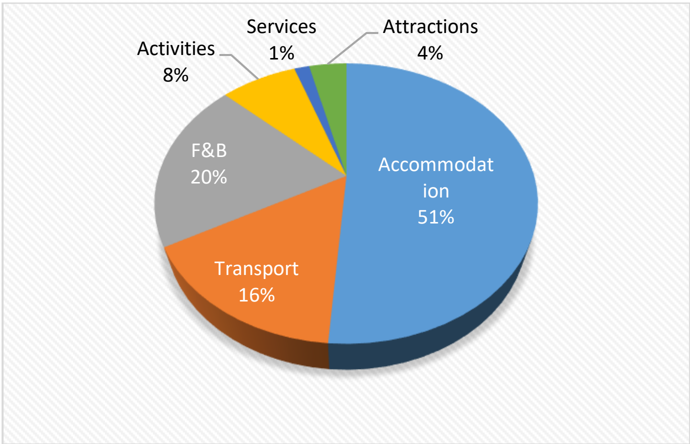


Figure 35 Local employments by sectors

A detailed picture of the total employment and its share of local employment is given in table 08. the analysis shows share of local employments by individual sectors in addition to the sub sector share and size of employment by sub sectors and sectors.

Table 19 Local Employments

	Sector	Subsector	Local Employment	Total employment	Percentage of local employments
1	Transport	Three wheelers	145	145	100
2	Accommodation	Hotels	120	300	40
		Boutique Hotels	118	230	51
		Guest House	199	292	68
		Homestay	52	52	100
		Circuit Bungalow	-	3	-
		Lodge	-	2	-
3	Food & Beverages	Traditional foods (Homes)	75	75	100
		Restaurants	78	132	59
		Helabojun	20	20	100
		Mobile Sellers/Street Food	93	93	100
		Fruit & Vegetable Sellers	5	5	100
4	Tourism Activities	Trekking	55	55	100
		Camping	24	24	100
		Nature Studies	-	2	0
		Free Shooting & Film	1	2	50
		Adventure	1	2	50
		Village Tour	3	3	100
		Natural Swimming Pool			
		Food Preparation	5	5	100
		Boat Riding	3	3	100
5	Services (Including creative industries)	Guide Service	5	50	10
		Kithul Products	55	55	100
		Handicraft	2	2	100
		Cardamom	2	2	100

	Sector	Subsector	Local Employment	Total employment	Percentage of local employments
		Jessy & Toys	1	1	100
		Laaksha	1	1	100
6	Attractions/Assets		28	31	90
	Total		1,091	1,587	

As given in the analysis, major categories of the local employments include hotel staff, guesthouse staff, homestay operators, local foods, street foods, trekking and three wheelers. Employment in hotels and guesthouses are formal and fulltime, entitled for monthly salary whereas most other employment are informal accounting to self-employment, part time engagement with having an inconsistent income. Unique and traditional knowledge of the community is accommodated by local food sub sector and trekking. The community who have engaged as helpers of trekking hold thorough knowledge of geographies of attractions, nature values (plants and animal), history, culture, heritage etc. However, this traditional and unique knowledge is not valued adequately by the tourism to benefit the community fairly. As helpers they are entitled only for a fee around Rs. 2,500 per event. The community is not well organized among themselves due to capacity and networking constraints. As such do not claim a reasonable fee for their involvement. Quality of other services offered by the community (homestay, camping, street foods) is not standardized for higher value creation. Knowledge and capacity of local operators is also a barrier to offer value added services. Some youth are engaged in tourism but the presence of young girls remains very low due to existing limited capacity of the industry. Further, the following are some factors that limits the youth and women participation.

1. Potential for youth and women have not been capitalized properly through capacity building and awareness (camping, trekking, nature studies etc.)
2. Agencies are not prepared to offer opportunities for youth and women through their attraction management and coordination of tourism services
3. All attractions are not promoted well to expand opportunities for communities around them (Bambarakiri Ella, Sera Ella, Heel Oya etc.)

4. As a whole the destination is not promoted among experiential tourism segments for value added tourism in the destination.
5. Sustainable funding sources are not available for startups.

4.7.6 Physical Resources

Physical resources being used in the value creation process were analyzed to understand significance of resources, controlling authority/ownership, local ownership, negative impacts or barriers of physical resource limitations if any. Knuckles range depends on environmental resource for its tourism. Issues in sustainable management of the environmental resource is discussed under different sections of this analysis. Attraction management is discussed under this sub section.

Investments: Size of existing investments (only for facilities excluding lands) are estimated for selected sectors and sub sectors. It has been segregated based on the origin of the investment as local and outside investments. Equity is also estimated for some sub sectors where local people engagement is sizable.

Table 20 Investments by sub sectors

	Actors	Total Investment Value (LKR)	Local Investment Value (LKR)	Percentage - Local investments
Accommodation	Boutique Hotels/villa	920,000,000	420,000,000	46
	Guest House	828,000,000	600,000,000	72
	Homestay	104,000,000	104,000,000	100
F&B	Restaurants	247,500,000	232,500,000	94
	Local Food	18,750,000	18,750,000	100
	Street Food	13,950,000	13,950,000	100
Transport	Three wheeler	135,000,000	135,000,000	100
Total		2,267,200,000	1,524,200,000	

Analysis revealed that around 80 percent of three-wheeler owners have financed their investment (purchase of the vehicle) through a lease financing. As a whole, 40 – 60 percent of the local investments have been financed through the lease finance. The majority of three-wheeler owners have monthly repayment commitment on lease finance. Source of finance for investors from accommodation sector has been formal bank loans and around 50% of investment has been realized through bank loans.

Availability of Physical Resources: Physical facilities of attractions which are directly associated with visitor arrival, safety and experience are analyzed for selected parameters such as parking, ticketing, sanitary facilities, access roads and safety. It was a common observation that parking facilities were not developed to accommodate vehicles arrived to the key attractions – Reverston, Pitawalapathana, Bambarakiri Ella etc. This is one of the reasons for traffic conjunctions in main road to Reverston. Toilet facilities are not available or inadequate in attractions where large crowd of visitors arrive. Reverston, Bambarakiri Ella, Sera Ella are examples for lacking of toilet facilities. In such situations both visitors and the community embarrassed in fulfilling their needs. Also protests arise from communities for tourism due to such limitations of facilities.

Sector/sub sector	Parameter	Status
Attractions		
Reverston	Parking	Parking options: Roadside parking. But it disturbs smooth vehicle movement during peak time of visitor arrivals – higher number of vehicles arrive during weekends/holidays.
	Ticketing counter	All visitors are required to purchase entrance ticket. A ticket counter is available at Reverston. Procedure of ticket issue is not user friendly. Department of Forest, the operating party issue only a cash receipt instead of entrance ticket which has to be authorized by Range Forest Officer (RFO) – in case RFO is not available – visitors have to purchase tickets from other forest offices in the range.
	Toilet facilities	Not available
	Access road	Discussed under facility management

Pitawala Patha	Parking	Parking options: Separate vehicle park is available and roadside parking also occurs No significant disturbance to vehicle movements due to roadside parking.
	Ticketing counter	Ticketing counter is available. The same issue of ticketing is presence here also.
	Toilet facilities	Reasonable facilities are available.
	Access road	Discussed under facility management
Bambarakiri Ella	Parking	Parking options: Only roadside parking Visitors' vehicle parking disturbs public vehicle movements.
	Ticketing counter	Free entrance
	Toilet facilities	Only privet place is available. The capacity and facilities are not adequate
	Access road	Access road is not designed to manage road congest during peak time of visitors – large coaches are not sharp bends are not
	Land ownership	Surrounding lands are privately own. Public access road is available to visit the site. A reasonable extend of lands are acquired by outsiders.
Sera Ella	Parking	Parking options: Only roadside parking Visitor vehicle parking disturbs public vehicle movements
	Ticketing counter	Currently free entrance
	Toilet facilities	Not available
	Access road	There is a reasonable access. Road improvement project is in progress.
	Land ownership	Surrounding lands are privately own. Public access road is available to visit the site. Some land plots are acquired by outsiders.
Sembuwatta	Parking	Parking options: Roadside parking for vehicles stop at three-wheeler point. Separate parking facilities are available within the site.
	Ticketing counter	Available. Ticketing is done by the managing party – Elakaduwa Plantation.
	Toilet facilities	Available
	Access road	A reasonable road access is available

Hunnasgiri fall	Parking	
	Ticketing counter	Available. Ticketing is done by Hunnasgiri Estate.
	Toilet facilities	Available
	Access road	A reasonable road access is available
Memure	Parking	Parking options: roadside parking. There is no disturbance from roadside parking.
	Ticketing counter	Open entrance
	Toilet facilities	No common toilet facilities
	Access road	Good access road is available

Land Ownership: Land ownership is an indicator of resource access where local participation and engagement is expected. Communities are available around all attractions of Knuckles range. Those communities are also a part of the eco system of tourism for several reasons – the contribution or role of the local community in sustainable co-existence of the natural environment is essential – the natural environment supports traditional living pattern of local people with materials, resources, culture etc. Land ownership of local people around attractions or commercially important locations gradually transfers in to outside people which would lose control of local people over resources.

The followings are some evidences for this ownership transformation.

Lands with Outsiders' Ownership

Attraction/asset	**How significance**
Bambarakiri Ella	- 20 percent of the surrounding lands (25 acres) is currently acquired by outsiders.
Sera Ella	- Around 5 acres along access road of SeraElla is currently acquired by outsiders (this is less than 1 percent of the commercial lands around the attraction)
Etanwala (the closer stay of Reverston)	- Over 50 acres of lands extend in the village is purchased by outsiders for hotels and other purposes.

Heeloya	- 5 acres of land closer to Perumal Pennu Ella all is purchased by outsider (this is less than 1 percent of the commercial lands around the attraction) - about 20 acres at Kaludiyapokuna is in conflict of encroaching
Meemure	- About 10 acres of villagers' lands are purchased by outsiders ((this is less than 1% of the commercial lands around the attraction))

Hotels and boutique hotels sub sectors are highly important in value creation over other all sectors. All most all hotel sub sector is held by outside investors whereas around 50 percent of the boutique hotels also owns to outside investors. Altogether, around 80 percent of the total value creation is done by investors from outside. Local investors create only less than 20 percent of the gross value. Local people engage in many sub sectors and number of engagements of local people are also high in the value chain. However, they have mostly engaged in low value creation sub sectors or their products are not up to the level of higher value creation. When a provincial guide charge around Rs 15.000 per one day of service, local trekking guide (community people) charge only around Rs 2,500 per one day trekking. Inconsistency of value distribution among local actors and outside investors/actors occurs in many sub sectors. Low value creation occurs due to

1. Low investments made by local actors – their investment capacity also low
2. Low capacity and less knowledge to offer value added services – language barriers, technical knowledge on the subject
3. They are linked poorly with the other actors and clients
4. They are not organized themselves for better positioning in their sub sectors

In the sense of employment opportunities for local community, the value chain is somewhat at satisfactory level. Total population of the villages within and around major attractions is around 14,000. If the workforce participation rate is 50 percent, Knuckles tourism has created employment opportunities for around 12 percent local people. However, as discussed, major fraction of those employments (over 50%) is in self-employments or informal sector.

4.8 Analysis of Economic Behaviour

Economic behavior of actors or sub sectors is analyzed for different indicators – fees and commissions for intermediate operators, one of the key motivations of tourism – bargaining power, dependency on finance/credits, access to resources.

Financial motivation: Actors make some decisions or alternative arrangements seeing additional financial benefits through dealings. Followings are some situations where financial motivation of actors or visitors impacts on the attractions, other actors or experiences of the visitor.

<u>Loose repeating clients of site guides</u>: with the familiarization of trekking routes, both guides and groups tend to manage themselves of trekking and skip the service of site guides/community people in their second or after visits. The cost of the site guide though it is a small sum becomes a sensitive factor for groups. In total groups about 20% do trekking without site guides or community people. Role of site guide is important to minimize potential risk of visitors to the natural asset. However, there is no strict controlling system for avoiding self-trekking.

<u>Guides connect foreign visitors with local transporters</u>: Foreign visitors have to travel a shorter distance by three wheelers from one point before Sembuwatta lake. Still, they can travel by their vehicles up to the destination. Guides of foreign visitors encourage traveling by three wheelers to claim a commission from three-wheeler operators for stopping at three-wheeler point. This is an additional cost for visitor though the local transporter is benefited.

<u>Local Authorities are not encouraged to engage with waste collection at Reverston</u>: Department of Forest is the beneficiary of income generated through visitors' ticket charges at Reverston, being sole authority of the attraction. However, the local authorities are not encouraged to maintain a regular waste collection program for

Reverston without having direct financial benefits. They have to bear a sizable additional cost for regular waste collection.

Online platforms: some of guesthouse operators are not willing to register with online booking sites mainly due to the commission of the platform though they operate under low occupancy rate. This category perceive that the commission is an additional cost for the business while they forget the potential new business opportunities. Online booking registration itself is a standard of the service. Operator has obligation to comply for a minimum standard just after the registration. This is an additional burden for backward or poorly oriented operators,

Bargaining Power of Actors: Financial obligations: Most of small-scale operators – three wheelers, street shops, guesthouses are having financial obligations such as loan repayments, lease rental etc. they struggle for a minimum income which satisfies their monthly obligations. Such a group is poor in power of bargaining for price or complying with ethical and minimum quality standards. The overall quality of tourism is in a risk due this type of poor financial status.

4.9 Socio Cultural Impacts

4.9.1 Introduction

The tourism industry in Sri Lanka and the new trends in the recent past towards experiential travel offer an incredible opportunity to provide much-needed economic benefits in rural and remote areas, particularly to communities that lack the knowledge and financial resources to take part in tourism development without external support. Travelers are more than willing to spend money on unique, local activities, especially if this benefits local communities. It’s a fast-growing niche market and more travelers are interested in learning about local communities and interacting with them.

Regards to the specialization in natural resources and the cultural-based tourism is a potential avenue in the tourism industry of Sri Lanka. And, Value Addition in the different sub-sectors of the tourism industry is one of the horizontal development approaches that can result in more returns to the person who is engaged in the industry with maximum utilization of the inputs.

Community participation in the tourism industry plays a vital role in enhancing Sri Lanka's economy while it ensures that community groups can uplift their living standards. The Value Chain Analysis of the Knuckles range revealed socio cultural importance in the value chain.

4.9.2 Women & Youth Participations

The policymakers in the economic development sector described the south Asian region economy as a paralyzed economy since the earnings of the families were led by the males. According to their finding, 50 percent of the workforce of this region is women but it is underutilized due to several social and cultural constraints. During the past few decades, this situation began to slowly move toward success by enhancing the women's involvement in economic activities in Si Lanka. Also, youth group involvement is an essential component of any sector enhancement since they are searching best alternatives, new interventions, and efficient pathways for the particular sector.

During the Value Chain Analysis of two tourist destinations, remarkable attention was paid to find Women and Youth participation in the sub-sectors. As discussed before this value chain analysis was included six sectors and their sub sectors being functioned in the destination.

Accommodation sector: Accommodation sector includes mainly six sub-sectors namely Hotels (classified), Boutique Hotels, Guest Houses, Homestay, Circuit Bungalows, and Lodges. Altogether around 800 total staff (direct employments/self-employments) members are employed by nearly 180 accommodation entities located in Knuckles range. Of them, around 10% was women staff, but no women staff was found in the Circuit Bungalows and Lodges sub-sectors. The highest percentage of women engagement was found in Homestay sub-sector and it was around 90.0%. In the Guesthouse sub-sector, the women staff representation was only 5.0 percent and in Boutique Hotels was around 5 percent.

Most of young women employed in the hotel sector are receptionists and other front office operators. Job categories such as room services, restaurant services employed male workers. Female workers have to struggle with some barriers or challenges in the working environment and society. It is difficult for women to engage long hours or night shifts due to traveling issues and safety issues. The security of female workers in-room services is challenging due to various harassments and influences by some of the guests. There are reported cases of that female workers had unpleasant experience in their job commitment.

The youth employment hotel sector is appreciating accounting over 50.0 percent. It was observed that the operators/owners are in favor to recruit young male in their workforce.

Table 21 Employees Representation in Accommodation Sector

Items		Sub-Sectors						Total
		Hotels	Boutique Hotels	Guest Houses	Homestay	Circuit Bungalows	Lodges	
Units	Nos	10	46	69	52	3	3	183
Total Employees	Nos	300	230	292	52	3	2	879
Local Employees	Nos	120	118	199	52	-	-	489
	%	40.%	51.%	68%	100%			
Women Employees	Nos	15	11	15	47	-	-	88
	%	5%	5%	5.0%	90%			
Youth Employees	Nos	150	115	146	10	-	-	421
	%	50.%	50%	50.0%	19%			

Source: Author estimated data

Also, it is impressive, the local employment in accommodation sector is around 56.0 percent of the total employment. Even though some of the investors are outsiders they have given opportunities for local people due to several reasons. However, it is a good social safeguard measure for inclusiveness of the industry. Allowing the local employees creates sustainable income generation for their families and reduces the labor migrations.

Circuit Bungalows and Lodges are operated by the government entities/organizations or estates. Therefore, the relevant agencies recruit the employees with the required qualifications and experiences. Only few employees (around 10) in Circuit Bungalows and Lodges whom are male and mostly aged people.

Tourists are seeking opportunities for experiences in the traditional villages. Specially the Homestay sub-sector offers traditional living experience to visitors to an extent. Estate sector also a different experience for visitors. For example, lodging at testate workers' line rooms. Thangappuwa, Rangalawatta, and Sembuwatta are the villages blended with unique features of sub-Indian cultural and living patterns that could attract new segment of visitors. Currently, five number of workers' line homes have been set aside Thangappuwa village to accommodate the tourists. Also, this is a good initiative to promote local community engagement in tourism.

Proposals:

1. Community participated estate experience tourism: Currently, a housing construction project is been implemented by the GOSL with the financial assistance of the government of India. Under this project, each worker's family will be provided a completed house with 7 perch extent land. These houses will be allocated for the estate worker families who are living in the worker quarters. After shifting the worker families, their present occupied quarters will be vacant and these line rooms can be upgraded to provide accommodation facilities and promote culture experience. The following facilities should be upgraded.

- Improve the toilet facilities
- Improve the Kitchen and dining room facilities
- Provide adequate utility service (electricity, water, telecommunication, etc.)
- Improve the rural / estate-based catering service to provide the meals for the tourists and give training to estate/ Tamil women to prepare and supply required traditional foodstuffs for the tourists.

Activity sector: Trekking and Camping are found as major tourism activities in the destination. The following table presents women and youth participation in activity sector.

Table 22 Employees Representation in Activity Sector

Sub-Sectors	Items							
	Units	Total Employees	Local Employees		Women Employees		Young Employees	
	Nos	Nos	Nos	%	Nos	%	Nos	%
Trekking	55	55	55	100	10	18.2	30	54.5
Camping	24	24	24	100	0	0.0	24	100.0
Nature Study	1	2	0	0	0	0.0	0	0.0
Adventure Experience	1	2	2	100	0	0.0	2	100.0
Village Tour	1	3	3	100	2	66.7	1	33.3
Food Preparation	1	5	5	100	0	0.0	3	60.0
Boat Riding	1	3	3	100	0	0.0	3	100.0
Total	**86**	**94**	**92**	**98%**	**12**	**12.8**	**63**	**67.0**

Source: Author estimated data

In addition to main two activities, there are other sub-sectors namely Nature Study, Photography & Filming, Bathing locations, Adventure Experiences, Water Sliding, Village Tours, Natural Swimming Pool, Food Preparation, and Boat Riding. Around 90 employments are created by the activity sector.

More than 84 percent of employees in the activity sector are engaging with Trekking and Camping sub-activities. All these employees are local employees and no migrated workers. Though local community have more opportunity to work in the activity sector employments, the size of the sector is quite small currently. Local people have traditional knowledge, more access to the trekking and natural resource, born with culture and living etc. to claim more opportunities in the activity sector.

The female engagement in trekking is around 18.%. Trekking groups with women and children, prefer female facilitator. This potential could be capitalized further promoting female participation. Meanwhile, female facilitators face the same gender barriers in handing groups of trekking. Even they may have physical disadvantages for this like hard activities. No direct employments found in Camping, Adventure Experiences, Water Sliding, Boat Riding sub-sectors. However, role of female in camping process has not been recognized well, the entire food catering function is handled by female.

Visitor perception is also a barrier for female to engage in activities. Majority of visitors don't trust the capability of female and they predict safety, reliability and facilitation would not be assured by female as activity facilitator.

However, participation of young people in activity sector is higher compared to other sectors. In trekking, nearly 55 percent of employees are youths whereas camping sector youth participation is close to 100 percent.

Proposals:

1. Encouraging female in non-traditional sectors: There are few evidences for successful female engagements in activity sector to confirm that females also fit with the job. A trained female groups are available but not fully active. They may require additional motivational support and market networking.

2. There are many religious and cultural festivals around the communities of Knuckles range which are not linked with tourism properly. Those cultural events may create more opportunities for female; supplying of costumes, body painting, local foods etc.

Food and Beverages sector: The Food and Beverage sector consists of Restaurants, Local Foods, Street Foods, *HelaBojun*[1], and Fruits/Vegetable Sellers. Altogether, around 190 entities and self-employments are available. The sector has created around 240 direct employments. The local employment in restaurants is around 20%.

[1] Hela Bojun is a gathering of individual women-run stalls coming together in one food court, thus empowering women to run their own businesses and become entrepreneurs. Women from rural areas are trained in hospitality, hygiene, and financial management, and a space is provided. All technical knowledge and business management awareness and facilitation are given by the Department of Agriculture. All the food items that are prepared and sold in Hela Bojun stalls are prepared using only locally produced raw materials. No food preservatives, artificial ingredients, or imported materials are used in the preparation of food items in Hela Bojun. This concept has been introduced and implemented by the Department of Agriculture since 2018

Skilled category of employments in restaurant sub sector are migrated people. In other sub sectors local employments are dominated. Almost all entities are operated by local people or they are self-employments.

Compared to other sectors of the tourism industry, women's participation is high in this local food and *Hela Bojun* sectors. Here also traditional knowledge and skills of local people is an asset for them to position in the sector. potentials for value additions could be linked with this women groups to create more value.

The women participation in restaurant sub-sector was around 6% and most of those engagements confine to kitchen and other helper activities. Street food sub sector is mostly based on self-employments. Around 54% of operators are female.

Compared to the other sectors, food and beverages sector has attracted only few number of youth. It is around 9 percent of the total employment of the sector. sizable participation of youth was found only in only in restaurants. Most of the employments in F&B sector are highly informal and seasonal also low income generating. Structure of the sector would not be attractive to invite more youth participation.

Table 23 Employees Representation in Food & Beverage Sector

Items		Sub-Sectors					Total
		Restaurants	Local Foods	Street Foods	Hela Bojun	Fruit/Vegetable Sellers	
Units	Nos	33	75	93	2	5	208
Total Employees	Nos	132	75	93	20	5	325
Local Employees	Nos	78	75	93	20	5	271
	%	59	100	100.0	100.0	100.0	
Women Employees	Nos	17	75	51	20	0	168
	%	13	100	55	100.0	0.0	
Young Employees	Nos	36	10	10	0	0	56
	%	27	13	11	0.0	0.0	

Source: Author estimated data

Proposals:

1. Standardization of services: Communities in villages like Ilukkumbura hamlet engaged in local foods supply to visitor groups. But this service should be further upgraded by introducing good hygienic practices and hospitality management.
2. Established community centered tourism clusters at attractions: A sizable part of Rathna Ella community is currently engaging in diversified income-generation activities in tourism. They run cafeteria services, parking facilities, Eco-Lodging and Guiding services. The same way of coordinated service could be introduced to other selected attractions.
3. Vocational trainings: Young girls could be trained vocationally on F&B services aiming employments in the tourism.
4. Promote entrepreneurship among women groups: Postmistress of sub-post office at Attanwala is a model female entrepreneur who has capitalized tourism opportunities for income generation. She operates a homestay facility successfully. Entrepreneurship development of women groups would be a support for start ups in local tourism.

5. Conservation of traditional knowledge and skills through tourism integration: food culture of local community could be promoted among visitors creating more opportunities for females.

Service sector: Guide service is the major sub sector under services sectors. Other sub sectors are selling *Kithul* products, Handicraft, spices, laaksha[2] products and grocery items. There are over 100 different service providers. Most of operations are self-employments. The guide service is mainly provided by individuals from Kandy or other outside locations. Women participation in outside guide service is vary less. (Only one female guide is available in Central Province Tour Guide Association). However, about 50% of the total employments is accommodated by young people. There are few

[2] ***Laaksha industry*** has recognized as a unique art that resembles the proud heritage of Sri Lanka. According to the folklore, Laaksh artisans were among the eighteen castes who came to this country along with "ven. Sangamiththaa Theraniyo" during the third century BC. Laaksha industry has limited for few districts in Sri Lanka and only specific artisans proceeding with the original Laaksha technique. The most well-known areas for this industry are Matale-Hapuvida, Tangalle-Angulmaduwa, Kandy-Hurikaduwa, Balangoda-Pallekanda

female site guides trained by Tourism Dept of CP. However, only one or two is active currently.

Laaksha products are iconic handicraft items produced at Hapuvinda in Matale district. Two Local vendors collect products from producers and trade Reverston. Cardamom also can be identified as an important product that can be promoted among visitors in participation of female groups. However, Dept of Forest has restricted entrance of local community in to forest area for cultivating cardamon which has been the traditional way of cardamon production.

Table 24 Employees Representation in Service Sector

Items		Sub-Sectors						Total
		Guides	*Kithul* Products	Handicrafts	Spice	Grocery	*Laaksha*	
Units	Nos	50	55	2	1	1	2	111
Total Employees	Nos	50	55	2	1	1	2	111
Local Employees	Nos	5	55	2	1	1	2	66
	%	10.0	100.0	100.0	100.0	100.0	100	
Women Employees	Nos	2	0	0	0	0	0	0
	%	4	0	0	0	0	0	0
Young Employees	Nos	25	0	0	0	0	0	25
	%	50.0	0.0	0.0	0.0	0.0	0.0	

Source: Author estimated data

Proposals:

1. Preservation and promotion of Sri Lankan *Dumbara Rataa Kalala*, or *Dumbara* mats as unique local product among visitors. One family is available at Heeloya village practicing *Dummbara Rataa*. Women participation could be promoted through this like traditional knowledge.
2. Promotion of lesser-known attractions: *Sulugune* village is one of the lesser-known attraction best fitting with photography and filming

Transport: Three-wheeler operators are the larger sub sector owned by local actors. This is male dominated service. However, one female was found operating a three-wheeler from Rattota to Reverston. This is also nontraditional sector for females, having several social and gender barriers to engage in local context. However, male young people mostly engaged in the sub sector.

Table 25 Employees Representation in Transport Sector

Items		Sub-Sectors			Total
		Large Coach	Van	Three Wheels	
Units	Nos	-	-	145	145
Total Employment	Nos	-	-	-	-
Local Employment	Nos	0	0	145	145
	%	=		100.0	98.5
Women Employment	Nos	0	0	1	1
	%	-		0.7	0.7
Youth Employment	Nos	-	0	127	127
	%	50.0	-	94.1	93.4

Source: Author estimated data

Proposals

Three-wheeler operators are not offering value added service for visitors other than the transport services. Specially young male operators could be developed as guides for round tours with necessary trainings and capacity building. Yet no any agency has involved in taking three-wheeler operators in to the formal tourism function.

As discussed under physical resource analysis the road network connecting attractions and parking facilities are not improved to provide with visitors a comfortable transport service. It is a priority need for better functioning of the value chain.

4.9.3 Socio- Cultural Benefits

It was one of the objectives of the analysis to understand socio cultural impacts (positive and negative) triggered through tourism. All sectors were carefully examined through stakeholder consultations and KIIs.

Socio-cultural Positive Impacts: Opportunity to use the idling workforce economically: Women and other community groups have been able to utilize their additional time in tourism activities as a result of Knuckles range tourism. There are number of people including women who engage in tourism as a part time engagement. Also, tourism has positively contributed to reduce labour migration and create economic value through local resources.

Economic value to traditional knowledge culture and heritage: Most of the local actors or workforce engaged in tourism activities have capitalized their traditional knowledge or skills for creating economic value. This is a huge socio-cultural benefit that community people encountered.

Economic opportunities for the youth and women groups: As per previous analysis on women and youth participation it could be concluded that tourism has given some opportunity for women and young people to be inclusive in the economic process. Vulnerable groups in poorly connected isolated villages may have only few opportunities to engage in economic activities. Tourism in lens of opportunities for vulnerable groups has create positive impact socially.

Knowledge transfer: Some village youths have followed professional training on tourist- guides. Also, they have had opportunities to work with experienced tour guides and other activity operators and share knowledge in professional tourism service.

Negative Impacts on Communities: Socio-cultural negative impacts and the risks resulted by the tourism were extensively analyzed during the analysis. The significant negative impacts and risks are summarized below;

1. Village women face difficulties in using bathing places (examples: Thelgamuwa, Vaddapani Ella, and Sera Ella) during high number of local visitors gathered. Some visitors used to behave unaccepted way creating conflict situations with the local communities. Acceptance of tourism among local communities is deteriorated when visitors become a threat for community living pattern.

2. There is an emerging challenge to local actors who operate homestay facilities. Investors coming from outside have purchased lands and built up new guesthouses capturing the business of local actors. Opportunities for local actors would be declined with this acquisition process continues.

3. It is common practice of most of homestay visitors to have liquor at their stay. There is a tendency to join homestay operator with the groups for entertaining. This results some conflicts within the family as well as with the guests. There are incidences for unethical bargaining for fee of stay in compensation of free treatments offered by guest. This type complexities deteriorate overall standards of the service sector.

4. Pressure on Resources
   Public Transportation: The majority of visitors arrive Reverston by Rattota – Reverston route. The other route is Laggala – Reverston road which is used by limited number of visitors. Rattota – Reverston route is congested heavily during weekends where many local visitors gathered reverston and other attractions of Knuckles. It is usual experience for local people who use public transport spending hours on the road due to unbearable number of vehicles on the road. This situation is a hassle for both visitors and local people. However, the local people would be victimized largely by additional pressure of traffic.

Access and privacy: There are public bathing and washing places along rivers or waterfalls which are famous among local visitors as well – example - Bambarakiri Ella, Sera Ella, Thelgamuwa. Those public places are not freely available for use of local people due high crowd and privacy of girls and women is disturbed with visitors who use same places.

Access roads: A well visited example for disturbing the villagers' access roads is Bambarakiri Ella hanging bridge which connects main road and the village in the other side of the waterfall. The hanging bridge is frequently used by children and elders for their day today travel needs. Visitors also have to use the same bridge to cross the river and access the waterfall and bathing place. The bridge is overcrowded during weekends and holidays by visitors. Even it has not been designed for a heavy crowd. Now the bridge is seriously damage causing a danger for both users.

Employment opportunities for Youth: It was observed that a considerable percentage of households (30 percent in Atanwala village, 15 percent in Rathkinda village) has engaged in tourism activities directly. It shows the potential to expand the income-generating opportunities for youth and women further. In addition, the following potentials also were observed by this analysis.

1. Youth labor migration from villages to the capital city and other urban areas-

A considerable youth group of the villages has migrated for jobs in Colombo or other cities. A part of youth community could be retained in the tourism through proper vocational trainings and job orientation.

2. Establishing a sustainable mechanism to use non-wood forest products (Honey, medicinal value parts of the plants fruits/nuts, etc) in the tourism value creation in partnerships with the authorities.

Employment opportunities for Women:

1. Orientation for the women on food preparation and processing
   Needful training should be delivered to the women who are willing to engage in the tourist food and beverage supply sub-sector. Especially these training should be focused on how to keep the hygienic conditions in food preparation processes, how to deal with the customers, hospitality service and how to conduct business activities and how to conduct the promotion programs in the sub-sector, etc.

2. Development of rural/cultural products

   A more tourist attraction and income can be accessed through the rural products of the area. Therefore, the research and development activities should be focused to promote such kinds of village products. The examples for such products are as follows;

   I. Making handicrafts weaving products such as mats etc. UNESCO has announced this as an intangible Cultural Heritage of Humanity in Sri Lanka. A marketing and promotional system should be introduced to the women who are willing to engage in the sector. Further, the needful training to manage the livelihood activities should be granted

   II. Trickle honey and Jaggery products. The secondary data revealed that 55 persons are engaged in the Trickle Honey and Jaggery production sub-sector. Currently, they sell Honey and Jaggery as the 1st product of the industry to the visitors. But there is huge potential for value addition in the sector. At least, another 55 women can get opportunities for sustainable income-generating activity by introducing the value addition to the sub-sector.

   III. Cardamom, fruits, and vegetable products. Villagers have cultivated cardamom as an under-crop in the forest that is under the purview of the Forest Department. Considering the severe environmental hazards that occur from the cardamom cultivation, Forest Department has banned the cultivation of cardamom within forests. This has created huge income deductions for the villagers. But, there is a possibility cultivate the cardamom in the home gardens. Therefore, a program should be introduced to popular the cardamom at the home gardens level since it directly earns the money by supplying the visitors,

   IV. The farmers of the area cultivate vegetables. A system should be introduced to sell the excess amount of their products to the tourists. There are only five fruit and vegetable sellers in the village. Some farmers send their products directly to Dambulla and Katugastota economic centers. During the peak period of production, farmers face huge price reductions and they face difficulty in covering the cost of production. Hence, the area and the products specific value addition program should be introduced to the farmers for a sustainable income-generations.

V. The training on values addition of the village products and packing should be granted to the women who are dealing in the sector for better performance of the livelihood activities. Especially in the local food production sector, about 75 women entrepreneurs are engaging in the sector and facing issues in producing high-quality local foods hygienically. The main reason is maintaining the hygienic conditions during the food preparation process and the packaging. It is essential to train those women entrepreneurs on the packaging and the hygienic condition maintaining for better service delivery.

The employment opportunities for Vulnerable Persons: Recruiting physically disabled persons for the ticketing counters at the entrances of the destinations and viewpoints.

4.9.4 Women and Vulnerability Analysis

To identify the risks and negative impacts on women and vulnerable groups of the society, the study focused different risk factors. Accordingly, women and gender analysis were carried out.

The first indicator was measuring the levels of violence against women (including rape cases, sexual harassment, and trafficking in women). No such incidents were reported during the study period and it revealed that there are no such incidents that happened even in the past period of the villages due to tourism.

Having equal education opportunities for all human beings without being gender-biased is a positive indicator in an advanced society. The gender analysis focused to check the completion of education by women and girls who are employed in the main or sub-sectors of the tourism industry. Special care was paid to search for any discrimination that happened due to gender. The following findings were revealed in the analysis;

- The education level of the women and girls of the village is varying from low to higher education. The women workers who are working in different sub-sectors of tourism have gained low to middle-level education (up to GCE (A/L)). The women who have higher-level education are not interested in the income-generating activities or job opportunities associated with tourism and some of them have migrated from villages to outer areas for better jobs and further studies.

- Capacity among women workers & entrepreneurs – The women entrepreneurs have built up their capacity to handle the customers and the business opportunities through modern technologies. It is a remarkable fact identified during the study as an added advantage for their livelihood activities.

- Financial Management among women entrepreneurs of tourism is at a satisfactory level. They have clearly identified the importance of the investment and the saving. Hence, financial handling is much better than males.

- Keeping hygienic conditions and hospitality management among women who are in the tourism-based businesses are considerably higher. It is up to satisfactory level.

- The experiences gained in the traditional food preparation was a positive benefit for women who are undertaking food and beverages sector.

- No discriminations were observed among women or girls in education within the area.

The study paid attention to checking the social protection measures that support those vulnerable groups, including those with disabilities, to leave from poverty to sustainable livelihoods. Presently, there is no such mechanism for social protection or hand-holding support to the vulnerable groups of the society to continue sustainable livelihood activities. The new dimensions should be identified by the value addition process of the sector with special care for these social groups. Further, the social protection program should also be implemented as an integral part of the development of the future program. No incidents were reported that caused negative impacts on the livelihood or day-to-day living patterns of persons due to the tourism.

The facts were checked to search the evidence of awareness and training activities on social protection targeted at women and men, including those in the informal sector and other vulnerable occupations. The group discussions had with marginalized groups of the area mentioned that there were no such well-organized or planned training or awareness program held for the vulnerable persons on occupations or income-generating activities. Our observation emphasized to conduct such a program without favour or discrimination, all categories of society need awareness and training activities on social protection. It will be an added advantage for the whole society.

The study focused to check the difference in the percentage of men's and women's employment in tourism. The study finding revealed that women participation remains very low in the Transport, Guide, Adventure, and Camping sub-sectors in the destinations. However, there is a potential for women workers to expand their participation and the future development programs should be designed to enhance the women's participation in those sub-sectors. Some visitor groups prefer female operator services than male operators, it needs to identify those special needs and preferences of visitors to promote female participation.

The challenges that are especially faced by the women (Stereotypical views) in the tourism industry and less opportunity than men on getting employment opportunities were reviewed in the study. In the transport sector, out of 145 Three-Wheelers operators, only one woman is working as an operator. During the discussion, it revealed that long periods of working time and security issues are challenges those women face in the sector. But there are job opportunities for women as transport coordinators and investors. In Camping sub-sector is also not represented by the women. Due to security issues, they are reluctant to work as the facilitators of the camping sub-sector.

Evidence of social attitude toward gender stereotypes is one of the factors that was considered in the analysis. No special attitudes or traditional feelings were observed regarding gender stereotypes. There are no gender-biased barriers, especially for women in society observed.

The study focused to check the disparities in income from businesses, salary, or wages for women. There are wage disparities for women in the unskilled labour category but not in skilled jobs. Future development strategies should be focused to avoid such discrimination and securing women's job opportunities.

The time spent for the income-generating activity or job was measured as one of the important indicators (Time use or employment: measured by time spent in economic activities and in employment) in gender and vulnerability analysis. Women and vulnerable groups have not engaged in the room service job category in the large hotels, and boutique hotel sector due to the long working time. But women who engage in their own income-generating activities, spend more time on their activities than the paid worker categories.

The employees' rights such as meals, medicine, restroom facility, leaves, equal salary, etc. were reviewed during the analysis. The study focused on the hired staff in Large Hotels, Boutique Hotels, Guest Houses, and Restaurants to find any discrimination against the women and vulnerable categories in their employment rights if any. Most of the investors had not recruited the staff representing the vulnerable categories. However, the workers' rights such as salaries (skilled category), meals and other facilities were not violated by the authorities based on the gender factor. However, sanitary and rest room facilities should be improved further for the women staff members.

Providing disabled access to the common premises is a directive that was announced by the Health Department and the Social Development Department of Sri Lanka. The premises that we subjected for the analysis did not adhere to the disabled access adequate for the visitors. The main reason was the visitors who come to this destination mainly target to participate in Trekking, bathing in natural locations, bird watching, nature studies, and other adventure activities. Therefore, physically disabled visitors rarely visit these premises. The premises owners mentioned that the inclusion of disabled accesses is useless since it requires a high capital cost. Anyway, if a disabled visitor comes, the hotel staff, personally care for him within their premises without any disturbances.

Access to resources: measured by access to means of production and to management positions. No barriers for women or vulnerable persons were traced. But a special program should be scheduled to get the participation of the women and the vulnerable persons since it gives the sustainable income-generating avenue to maintain their living standards.

Representation in key decision-making positions in the tourism sector was analysed but there are no proper or registered organizations that have formed related to tourism. Hence, this factor couldn’t be traced well.

Women/ vulnerable representation in key decision-making positions in the destination management was traced during the analysis. The study revealed that the women who have engaged in tourism do not represent such key decision-making positions in the destination management process. Only limited and informal arrangements are available for communities to participate in the destination management and decision making.

In Meemure village, tourism services are undertaken mostly by the parents of the families. Youth participation in tourism-related activities is very low. People who are not connected with the tourism have negative mindset towards tourism and visitors due to different perceptions. Puwakpitiya village is one of the most popular tourist attractions in the area but villagers refuse tourists' arrival believing visitors’ arrival will negatively affect the subculture of the village. They strongly oppose visitors to use bathing places with unproper dresses which is much fair reaction for villagers. Facilities such as hanging rooms and sanitary should be developed for the visitors to minimize the negative community impacts.

4.10 Analysis of Organization and Framework

The eco system of Knuckles tourism consists key elements – organizations or agencies, tourism service providers, communities – human component, policies, regulations, norms – governance systems and power relations. All elements imply on value chain either positive or negative impacts. This analysis aims to examine impediment and impacts of the organization and framework.

Indicator	Impediments	Impacts
Registrations, permissions and certification	Registration of tourism service providers is a mechanism to regulate services and service standards. SLTDA has not been able to achieve this target to a reasonable extent due to several reasons. 1. Registration procedure is long and discouraging actors 2. Actors perceive that registration is only an additional cost which doesn't make benefits for the operations. 3. Small scale operators could not meet the registration requirements easily. Tourism service registration thus has not been able to enhance the service quality. Some firms/entities have developed their standards individually. Sector/sub sector standard development would not be consistent through individual attempts.	Overall standards of local operators (homestay, guesthouse and villas) are not improved Customer satisfaction is not achieved. The value creation of local operators remains low.
Presence of provincial actors at national tourism management	Revision of the national tourism act is commenced which aims structural changes of the tourism regulation. This revision would be an opportunity to strengthen the participation of provincial level stakeholders and role in tourism development. Provincial authorities of tourism are not recognized properly assigning duties of	Lesser-known attractions are not promoted well. Local actors in sub sectors (accommodation and services) are less benefited

	regulations, capacity building of stakeholders and implementation of development programs. The human resource strength of national tourism stakeholders would not be adequate to operate at ground level activities. Being account of this, important services required by the actors at regional level are not delivered effectively. It is required to create opportunity for provincial level private sector stakeholders in national tourism management forums.	
Policies and regulations	Hilly lands located above 3,500 ft elevation has been declared as conservation lands with a Gazette notification. However, only around 15% of the lands where residence or commercial activities occurred before declaration (privately owned) has been acquired by the dept of forest up to now. As discussed before, entrance ticket procedure of the Dept. of Forest is not user friendly. Internal procedures need reforms to allow easy ticketing. It should be a formal ticket accessible at any counter physically or online purchase even in holidays. There is no proper regulations to avoid trekkers' access to the conservation forest without authorized helper or site guide. Absence of such regulations or	Unique environmental value of the destination deteriorates gradually. Tourism value of the destination also declines. Visitors' experience and satisfaction is affected negatively. Security of the natural environment is not ensured. Unwanted

	controlling mechanism allows trekkers to travel inside the forest on their own. (However, 90% of traveling occurs in participation of site guides). Unregulated entrance may cause damages or illegal activities to the natural resource and security issues for visitors.	visitors are encouraged to attractions.
Inter organizational coordination	Participation of private sector stakeholders in important decision-making events of the Knuckles tourism management is essential to communicate visitors' requirements, to share experience and knowledge with the other stakeholders and to formulate sustainable policies. Currently there is no such stakeholder coordination systems for Knuckles except a working committee which is working on land acquisition as per Knuckles gazette notification.	Capacity of the local stakeholders is not utilized properly for sustainable operation of the destination. Exclusion of local community from the tourism management would be harmful to the natural environment.
Resource allocation for conservation and tourism development	Some of the important conservation and tourism development activities have been stuck due to resource limitation of key stakeholder organizations – Dept. of Forest and provincial Dept. of Tourism. - Demarcation of buffer zone of the Knuckles range - Acquisition of declared lands - Implementation of regular waste management program at key attractions	Natural resource and sustainable tourism is put in a risk situation. Knuckles tourism largely depend on the value of natural environment.

	- Promotion of local actors; services locally and internationally	
Human resources to manage attractions	Dept. of Forest has commended expansion of ticketing counters to every key attraction. However, operational issues may occur due to internal human resource limitation of the Department. Community partnerships would be the feasible alternative to operate ticketing counters and manage attractions. Policy level reforms are required to establish community and public partnership.	Unwanted visitors are encouraged to enter in to attractions which creates risk of environmental damage. Free entrance directly effects value creation of attractions.
Security and safety of visitors/actors	The security aspect includes few parties mainly – visitors, communities, employees/actors and attractions (physical and natural resource). Of those visitor security at attractions has been challenged due to several reasons. Physical injuries and loss of life have been recorded in some attractions or on activities. Risky level of visitors is very high at waterfalls and water related adventure activities. For most of waterfalls, there are no any regular lifeguards available and proper prior education of visitors at attractions. Absence of attraction management system/manager has been the core issue of low level of security.	Position as unsafe destination Life and safety of visitors is threatened

	Unauthorized visitor entrance as trekkers is also a potential risk for both visitors and the natural resource. There is no regulation for trekkers to bring a site guide essentially for trekking purpose. Risk potentials of injuries and animal attacks are higher to self-trekkers. Most of guides/site guides don't bring safety equipment with them which are essential for trekking on difficult path. Mobile communication is also difficult inside of the forest in case of emergency.	

4.10.1 Synergies and Corporations

Community participation: Dept. of Forest has practiced community participated destination management mechanism for Knuckles for a period of time which has been inactivated for different reasons. Community organization systems is also formed for this purpose. The same mechanism could be re-activated to manage destinations effectively and solve some human resource limitation of the department. To be the mechanism is sustainable, involvement of the community should be compensated financially through earnings of the destination.

Participation of local authorities: Local Authorities are currently not connected with the Knuckles tourism. Dept. of Forest is encouraged to collaborate with local authorities (Rattota and Laggala particularly) in management of attractions including waste management. Currently the local authorities don't undertake regular waste collection program for Knuckles attractions due to this collaboration issues. For most of cases, hotels and guesthouse around tractions are also not having proper waste management mechanisms. Irregular waste management at destinations could be a significant issue in time comes Waste collection at attractions could be regularized through a mutually benefited collaboration between the Dept. of Forest and Local

Authorities. Attractions which are not having proper management (entrance ticketing, security and monitoring) could be managed by a partnership program with local authorities and communities in a sustainable management model. Such operational models may solve security and social issues associated with attractions. – Bambarakiri Ella, Sera Ella are examples to experiment new operational model.

National and provincial collaboration: Licensing and certification of tourism services is legislatively assigned with SLTDA. Since this process is inefficient at the regional level, the provincial tourism authorities could strengthen formally to play an active role in licensing and certification through a collaboration between two parties. Trainings, capacity building, awareness, evaluations etc. could be carried out by provincial authorities under standard guidelines and procedures whereas SLTDA could undertake the final steps of the process keeping the same national standards unchanged.

Challenges and weaknesses: Capacity of the provincial level tourism authorities: The provincial tourism authorities may require strategic direction and strategic program to support destinations at meso level of tourism. The organizational structure of the provincial authority is not included strategic level position to drive its mandate in a wholistic scope. It would be essential to design and implement programs for a strategic plan which is aligned with the national tourism plans.

Lacking of promotional tools with authorities: Promotion of lesser-known attractions in tourism destinations is primary duty of the provincial authorities. Also, they are required to develop tourism promotional tools and support sub sector with low value additions – homestay, local foods, guesthouses, attractions etc. to access more markets.

Regional and national level communication gap: It has no formal platform or mechanism for regular communication between provincial authorities and national authorities. As a result, collaborations and sharing of programs/knowledge/information are not effective as expected by the actors and regional stakeholders.

Resource limitation of provincial authorities: Annual budget allocation for the provincial authority is extremely low (around Rs 25 mn for all trainings, promotion and infrastructure development) compared to the destinations in the province. A sustainable funding mechanism should be worked out with national authorities for collaborative programs.

Policies impede value creation: SLTDA defined minimum requirements for tourism service registration are not practical for community involved sub sectors such as homestay. Currently the registration is not monitored strictly by the authority, therefore, operators are relaxed to run without registrations. A large part of the operators would not be able to register their entities if the registration is monitored strictly. Revision of the guidelines is required to make appropriate the situation and experience.

4.11 Environmental Analysis

4.11.1 Analysis of conservation enabling environment

The existing enabling environment for natural resource and heritage conservation is analyzed based on the parameters discussed below. Emphasis was focused on the organizational environment associated with conservation needs within the conservation forest. The other environmental impacts are discussed under hotspot analysis.

Orientation and Awareness of Visitors: Visitors are diverse in terms of their purpose of visiting the destination, environmental sensitivity, knowledge level etc. Always there is a risk to the natural environment associated with the visitor arrival. As being practiced in some similar attractions (Sinharaja forest), visitor awareness or orientation on environmental value of the destination, acceptable behaviour, unpermitted actions etc. should be a best practice as a precautional measure. Currently this visitor prior education is not carried out by the Dept. of Forest.

Monitoring mechanism: As discussed before groups or individuals travel inside the forest with absence of site guide or guide. There is no regulation to control this free traveling/trekking. There is no any mechanism to monitor trekkers' actions inside the forest. Best practice would be a regulation which make site guide or guide compulsory for trekkers. Site guide/guide are trustworthy to direct visitors for best practices.

<u>Policies and regulations</u>: Policies and regulations for forest resource management are strong and established. Guidelines/regulations are available separately for Knuckles range. However, there are issues occurring at the implementation stage. One of the major gaps is that the buffer zones of the forest are not surveyed and declared. Human activities occur in buffer zones due to this limitation.

<u>Practices</u>: There are some practices or actions are harmful for the environment

1. Free grazing of cattle in the forest: damaged some plants or growth of plants. This practice should be overcome with friendly negotiations with communities.
2. Irregular waste collection from attractions – accumulation of solid waste or inappropriate disposal methods (open burning) may case environmental damages
3. Groups or individuals kill wild animal in the forest for meat purpose.

<u>Local people in conservation</u>: Civil Society Organizations (CSO) who are playing an active role in the conservation of Knuckles range

<u>Resource allocation</u>: Some of the important activities which are compulsory for environmental conservation are delayed due to limitation of financial resources or absence of management systems;

1. Declaration of buffer sones and acquisition of declared lands
2. Waste collection from attractions – Reverston, PitawalaPathana, Banmbarakiri Ella

Positive impact	Negative impacts
Identification of endemic species	killing of animal mainly due to hotels are established. Guest demands meats
Declaration of conservation forest – above 3,500 ft. lands	Waste generation
Triger local organization for environmental conservation	Pollution of water bodies with plastics, glass, metals and polythene

Environmental related knowledge building among local people and guides	Stolen of Genetic resource (no recorded evidence but local people believe that this happens)

For above facts, enabling factors of conservation of Knuckles range are not at satisfactory level. Only regulations and CSO are more positive towards conservation whereas other practices should be improved further within a shorter period of time to ensure the conservation system is in correct path.

4.11.2 Hotspot Analysis

Environmental analysis for knuckles Reverston tourism destination was conducted by using the process and guidance contained in the 2017 Life Cycle Initiative overarching methodological framework for hotspots analysis. Environmental hotspot is a process which accounts for a significant proportion of the negative environmental impact in the value chain. Value chain is the entire sequence of activities or parties that provide or receive value in the form of products or services (e.g., suppliers, outsourced workers, contractors).

Environmental impacts analysis aimed to address the following aspects;

- Is there any potential to promote conservation or sustainable use of biodiversity?
- Is there any potential to promote climate change mitigation and adaptation?
- Is there any potential to improve holistic waste management?
- What are the potential for improving other elements of the natural environment?

Eventually stakeholders of the tourism are required to respond to the effect of;

- Climate change
- Natural and man- made disasters
- Unsustainable biodiversity
- Natural resource management by promoting alternative resource use that will improve the efficiency in production and consumption while supporting reform and modernization of the environmental management systems and protecting our biodiversity based on the findings of this analysis.

Hotspot Analysis is defined as a rapid assimilation and analysis of a range of information sources, including life cycle based studies, market, and scientific research, expert opinion and stakeholder concerns. The outputs from this analysis can then be used to identify and prioritize potential actions around the most significant economic, environmental and social sustainability impacts or benefits associated with a specific country, city, industry sector, organization, product portfolio, product category or individual product or service. Hotspots analysis is often used as a tool to developing more detailed or granular sustainability information. It is being used to filter and distil often large volumes of information to identify and prioritize hotspots for further investigation or action by industry, governments and other stakeholders. This may include piloting or implementing actions on the basis of the findings from the hotspots analysis.

Table 26 Summary of Environmental Indicators and Findings

Environmental pressure/ Impact	Value chain stage	Key Environmental Indicator	Baseline Data/ Benchmark	Findings
GHG	Transportation	Total no. of vehicles by type (Emission of GHGs)	Ambient Air quality standards (CEA/NBRO)	Total of 30,180 trips in the transport sector (950 motor coaches, 10,727 three wheelers 16,9402,088 vans and 7,709 bikes) Total CO2 emission is 1,561 mt.
Energy	Accommodation F&B	Total energy use by the tourism sector	Energy Consumption standards/SL SEA	Total annual energy consumption is 5,429,142.86 kwh Sri Lanka's per capita electricity consumption was 626 kWh/person in 2017
Water	Accommodation F&B	Total volume of water used by the	Water footprint (ISO 14046)	Annual water usage of accommodation and F&B sectors is 512,427

		accommodation actors		
Solid waste	Accommodation F&B	Volume of solid waste generated by hotels & other accommodation places	National standards of waste generation and disposal	Food waste generation from the destination is 72,000 kg. This is nearly 1 percent of the total hotel sector food waste. Annual food waste generated by accommodation sector nationally is 577,200 kg Total volume of plastic waste generated is 3,425 kg/year
Waste water	Accommodation F&B	- Volume of wastewater generated (percentage of total water used), - Volume of wastewater treated (percentage of total wastewater generated) - Discharge to the environment – treated water/untreated water	Wastewater effluent national standards	Total waste water generation - 358,699 m3/year
Waste	Attractions	Quantity of waste	National standards of	

		collected & disposed sustainably Quantity of waste recycled Waste free attractions/assets	waste generation and disposal	

Source: Author estimated data

1. GHG Emission

As per the proposed methodology, transportation sector was selected as significant in GHG emission. Number of vehicles and trips were estimated for different categories of vehicles which are being used in the transportation sector based on some assumptions and primary data collection.

> About 26 percent of the total energy use accounts for the transportation sector (2016). In 2000, transport sector share was 23 percent. The per capita transport energy consumption was 128 kilotons of oil equivalent (ktoe)/person in 2016. It was 91 ktoe/person in 2000. Out of all fossil fuels used in the country, 39% was used for transport in 2016, when it was 45% in 2000.
> Sri Lanka possessed 6.3 million vehicles by end of 2015, distributed as 3.3 million (52%) of motor cycles, 01 million (16%) of three-wheelers 672,000 of motor cars (11%) and 21 percent of other vehicles. The category of 'private vehicles (cars, motorcycles, and three-wheelers) has been doubled from 2008 to 2015 indicating a higher affordability of private transport and a clear shift from public transport to private transport. This transformation contributes significantly to the increase of GHG emission to the environment. (Sri Lanka Energy Sector Assessment, Strategy, and Road Map)

As per the estimation Knuckles tourism accommodates a total of 30,180 no of vehicles (trips) from four main categories – coaches, vans, three wheelers and bikes.

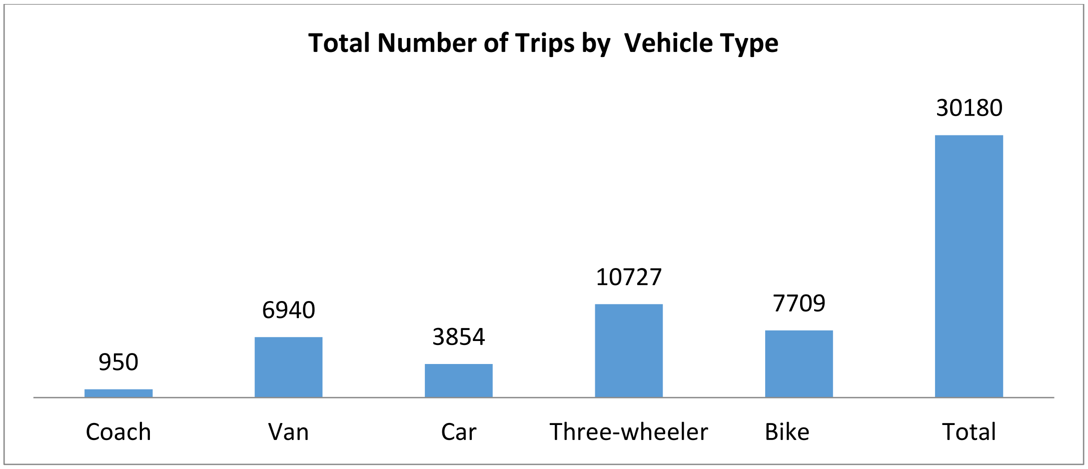


Figure 36 Total number of trips by vehicle types

Source: Author estimated data

Table 27 Calculation of Green House Gas (GHG) Emission

	Coach	Van	Car	Three-wheeler	Bike	Total
Share of vehicles (percentage)	18	42	10	20	10	**100**
Estimated number of trips	950	6,940	3,854	10,727	7,709	**30,180**
Passenger per trip	30	10	4	3	2	
Average milage per trip	300	300	300	120	120	0
Total millage (km)	284,974	3,390,000	1,483,200	1,984,840	1,186,680	**8,329,694**
Fuel consumption (km/l)	6	10	15	20	50	0
Petrol usage (l)	0	0	98,980	99,242	23,734	**221,956**
Diesel usage (l)	47,496	339,000	0	0	0	**386,496**
Carbon dioxide emission	127,744	911,762	232,400	233,015	55,726	**1,560,648**
CO2 in MTs	**128**	**912**	**232**	**233**	**56**	**1,561**
Percentage						
CO2 emission per visitor	4.48	13.14	15.08	7.24	3.61	4.48
CO2 emission per trip	134.47	131.38	60.30	21.72	7.23	134.47

Source: Author estimated data

Note: CO_2 Emissions from a gallon of gasoline: 8,887 grams CO_2/ gallon
CO_2 Emissions from a gallon of diesel: 10,180 grams CO_2/ gallon
(https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle)
1 gallon=3.785 liter

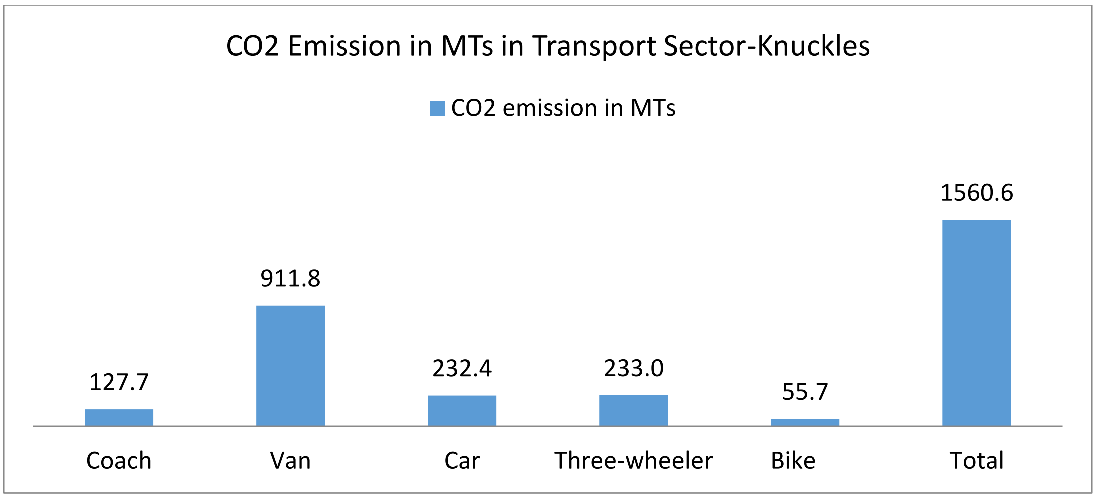


Figure 37 CO2 Emission in MTs in Transport Sector-Knuckles

Source: Author estimated data

As per the real time Sri Lanka most polluting city ranking, Kandy city in the Central province is at the 3rd place reflecting the level of air pollution. Most of the visitors, both local and foreign in long distance reach Knuckles via Kandy city. There may be an impact of Knuckles tourism on air pollution level of Kandy city.

Figure 38 Real-Time Sri Lanka most polluted city ranking

Climate Change and GHG Emission: Tourism Climate change is one of the most serious threats to society, the economy, and the environment and has been an issue of international concern for decades. The Inter-Governmental Panel on Climate Change (IPCC) has reported that warming of the global climate system is "unequivocal" and that it is "very likely" that anthropogenic (human-made) greenhouse gases (GHG) have caused most of the observed global temperature rise since the middle of the 20th Century. Ambitious emissions reduction targets for developed countries and an effective framework that addresses the needs of developing countries are required.

As climate defines the length and quality of tourism seasons, affects tourism operations, and influences environmental conditions that both attract and deter visitors, the sector is considered to be highly climate sensitive. The effects of a changing climate will have considerable impacts on tourism and travel businesses.

Tourism and travel also contribute to climate change through the emission of GHG. Tourism and travel accounts for approximately 5% of global carbon dioxide emissions. The transport of tourists to and within destinations accounts for 75% of all carbon dioxide emissions by the tourism sector, with air travel making up about 40% of the total. It has also been predicted that, under a business-as-usual scenario, carbon dioxide emissions from the global tourism sector will increase by 130% by 2035. Most of this growth was attributed to air travel. This projected growth in emissions from tourism is inconsistent with the deep emission reductions needed to address climate change… (UNWTO, 2009, pp. 5–6).

Reducing emissions is important for the long-term, however the tourism and travel sector also needs to adapt to the impacts of climate change in the short and medium-term. Across destinations and locations, the quality, quantity, and accuracy of climate projection data varies. This could limit or affect how nations, especially developing countries, adapt to climate change. The WMO, in collaboration with UNWTO, established an Expert Team on Climate and Tourism. Their role was to improve the application of information in the tourism sector. In 2007, UNWTO launched a Climate and Tourism Information Exchange Service to enable tourism stakeholder's access to research and data. The organization has developed and disseminated technical publications addressing climate change impacts and adaptation responses. The most important of these are "Climate Change and Tourism — Responding to Global Challenges" in support of the Davos Declaration, and "Climate Change Adaptation and Mitigation in the Tourism Sector: Frameworks, Tools and Practices" in coordination with the University of Oxford, the WMO, and UNEP released in 2008 (UNWTO, 2008, p. 3)

2. Energy Use

In general electricity use accommodates around 85% of the total energy use in hotel sector. The balance of energy requirement is provided by LP gas and furnace oil mainly. Only electricity use has been taken for this analysis based on its higher contribution to the total energy. However, it was adjusted for total energy use when it is compared with the benchmarks.

Total electricity use was calculated based on monthly electricity bill of a sample from each sub sector. Analysis aimed at calculation of per night per room energy consumption of each sub category to compare averages with benchmark energy consumptions and comparison among sub sectors

Table 28 Calculation of energy use

	Average Rooms/entity	Units per room /night (kwh)	Guest nights	Annual consumption (Kwh)	Percentage
Hotels	25	18.60	36500	679,070	61
Boutique hotels	10	4.65	42271	196,609	18
Guest houses	5	4.96	40000	198,450	18
Homestays	2	4.00	11388	45,552	4
Total				1,119,681	

Source: Author estimated data

Benchmarks have been established by SEA for different industry sectors including hotels as given below.

Table 29 Energy consumption benchmarks for Hotel Industry

Category	Benchmark (Kwh/room night) at 62% occupancy	Destination average
Five Star	162.6	
Four Star	107.4	
Three Star	96.5	18.6
Two Star	65.2	
One Star	69.1	
Boutique	160.4	4.65
Unclassified	71.1	
Supplementary	71.1	Guesthouses – 4.96 Homestay – 4.0

Source: Ensuring sustainability in Sri Lanka's hotel industry 2013

Source: Author estimated data

Compared to the national benchmarks, destination averages are reasonably low. Destination average for homestay sub sector is reasonably low compared to the bench mark. Guesthouses and Homestay sub sector is characterized by minimum facilities (air conditioning, refrigerator, hot water etc.) compared to standards which would lead low consumption of electricity.

Over 60% of the total electricity consumption accounts for large hotel sector in the destination contributing a significant environmental impact. It is necessary to encourage large hotel sector for renewable energy options and use of efficient designs, equipment and best practices to reduce electricity usage minimize the environmental impacts from tourism operation of Knuckles.

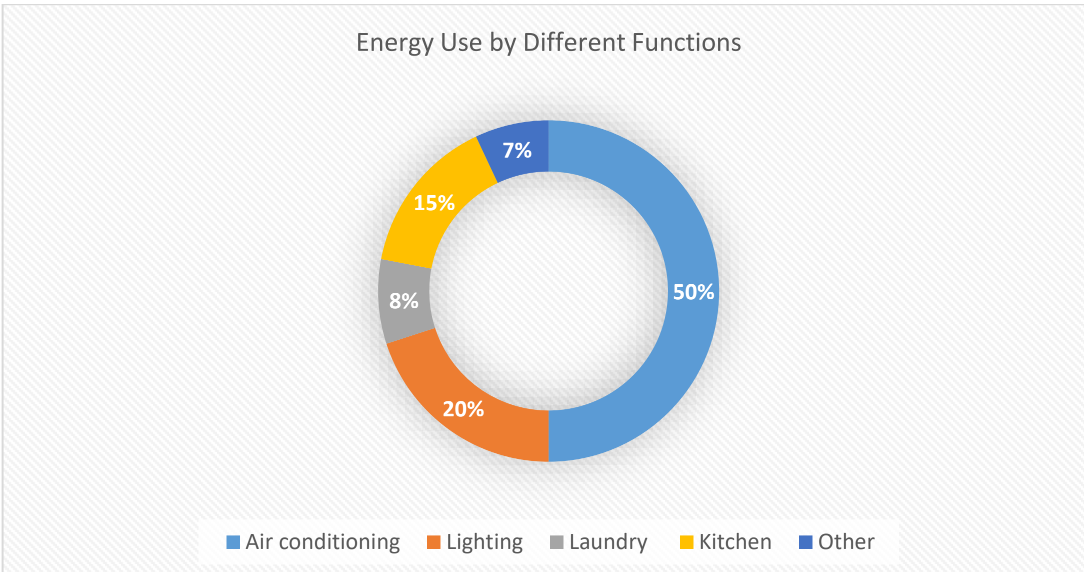


Figure 39 Energy Use by Different Functions

Source: Ensuring sustainability in Sri Lanka's hotel industry 2013

It was observed that only one entity out of 16 of sample (included only unclassified accommodation sector) is using solar energy coupled with grid electricity. However, the hotel segment has initiated use of solar power as an alternative energy source. They are keen on alternative, low-cost energy sources to minimize their high electricity cost. Small scale operators have no 'cost driven' motivation to use renewable energy compared to the larger entities.

3. Water Consumption

Tourism industry is heavily dependent on the natural environment and its resources, growth of the industry creates a pressure on the environment – specifically on natural water resources. It has found that water consumption, per guest, in a hotel can be around three times that of the average consumption of a person staying at home.[1] In this scenario, the relationship between the tourism industry and water resources becomes a key area of concern for sustainable tourism development. Sri Lanka has witnessed a significant growth in the arrival of tourists from all around the world, with more investments taking place in the hotel sector to cater to this demand. Consequently, the demand for water resources has also increased in this process. It is, therefore, imperative that the hotel sector pays adequate attention to the importance of water conservation.

Analysis of water consumption was done for accommodation and F&B sectors: Estimation of annual water consumption by different sub sectors was done based on monthly water bill of users whom water supply is received from National Water Supply and Drainage Board (NWSDB). The majority of entities – about 92% use ground water from their own sources mainly bore wells. The following table presents water consumption, distribution of water consumption among actors and per room water use.

Table 30 Calculation of water use

Sub sector	Average water usage per month (cubic meter)	No of entities	Annual Water usage (cubic meter)	Share of annual water usage	Water usage per night per room (cubic meter)	Bench Mark
Hotels			31,937.50	6%	1.26	1.26
Boutique hotel and Guest houses	242	115	334,105.26	65%	1.01	1.05
Home Stay	128	52	79,560.00	16%	1.06	0.28
Restaurant	169	33	66,825.00	13%		
			512,427	100%		

Source: Author estimated data

65 percent of the total water consumption accounts for Boutique hotels and guest houses. The lowest consumer is classified hotels. Homestay and restaurant sub sectors consumes nearly equal volumes of water. There is no bigger variation among per room water consumptions by sub sectors.

Except homestay other two sectors stand equal or below the benchmark level of water consumption. For homestays actual consumption level is quite high compared to the benchmark level. This would happen because number of persons per room in homestay is higher for some cases.

Studies have revealed distribution of water consumption among different functions of a hotel. Guest room is the largest consumer of water followed by kitchen, public toilets and laundry. Understanding of the distribution is important for operators to find out solutions of water conservation.

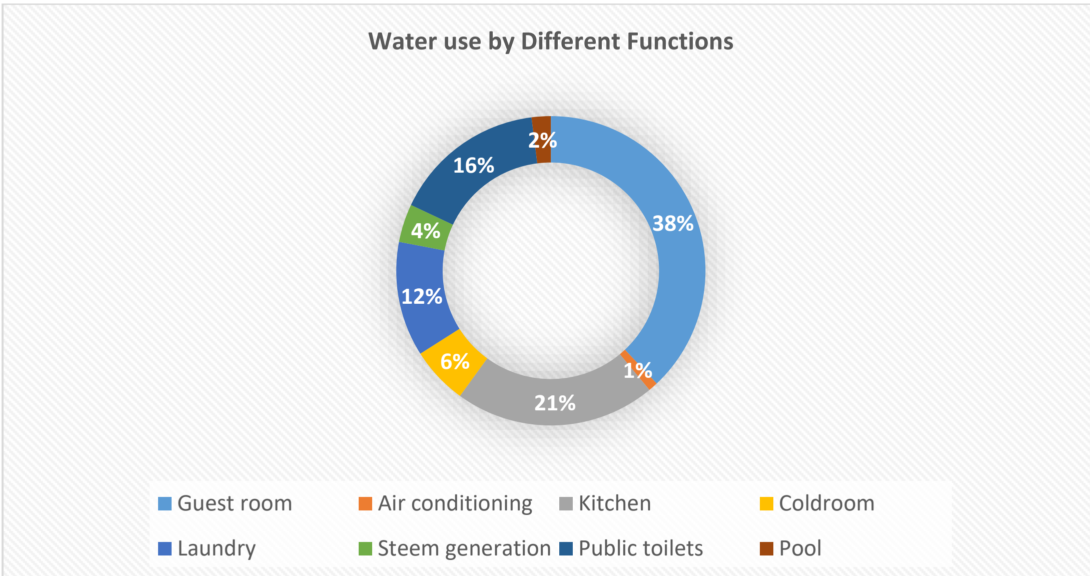


Figure 40 Water use by Different Functions

Source: Ensuring sustainability in Sri Lanka's hotel industry 2013

4. Solid Waste Generation

Solid waste, especially municipal solid waste, is a growing problem in urban Sri Lanka due to absence of proper solid waste management systems. The rate of generation of solid waste is increasing with the growth of population, technological development, and changing lifestyles. Currently, total municipal solid waste generation is around

6400 metric tons per day for all of Sri Lanka, of which only 3770 metric tons per day is effectively collected.

Solid waste from a typical hotel consists of restaurant food waste, office paper, bottles, plastic, aluminum beverage containers, and cardboard boxes. Although this waste is diverse, hotels typically generate a consistent type of waste. The majority is paper and food waste, with lesser amounts metal, plastic, and glass. This profile is similar to the standard municipal solid waste from residential communities

In a typical hotel, the breakup of solid waste generation by type is food and non-recyclables, 46.2 percent, followed by paper (25.3 percent), cardboard (11.7 percent), plastic (6.7 percent), glass (5.6 percent), and metal (4.5 percent). Variations in waste composition from one hotel to another can be attributed to differences in scope of operations and target markets.

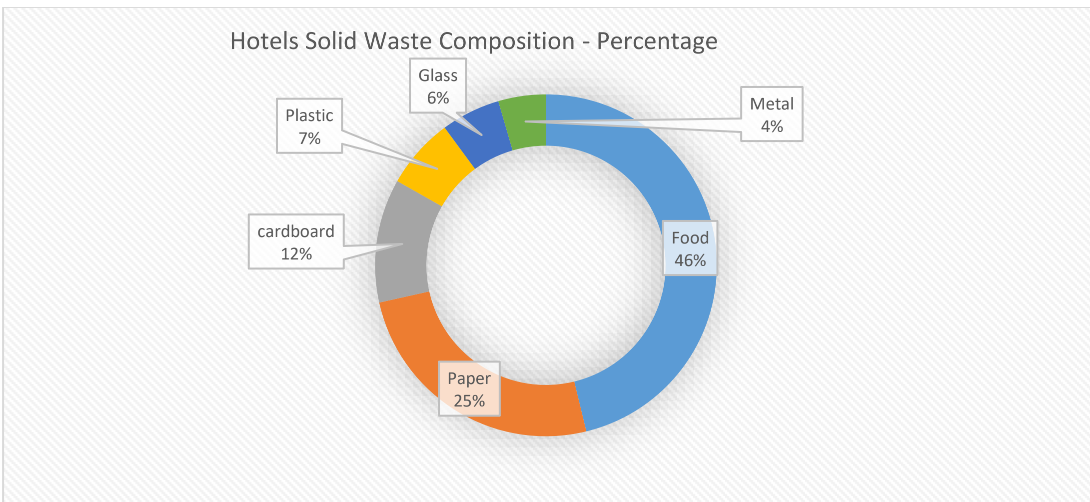


Figure 41 Hotels Solid Waste Composition - Percentage

Source: Ensuring sustainability in Sri Lanka's hotel industry 2013

Food Waste: It was observed that food waste generation is not having a bigger variation among sub sectors. But sub sectors that accommodate larger number of visitors are important to reduce total food waste in the destination. Except restaurants and homestays, other all sub sectors generate comparatively higher food waste.

Table 31 Calculation of food waste

	Sub sector	Daily food disposal of a person (kg)	Number of units	Annual guest visits	Food waste – Annual (kg)	Percentage
Accommodation	Hotels	0.3	10	36,500	10,950	24
	Homestay	0.3	52	11,388	3,416	7
	Boutique hotel/villas	0.3	46	42,271	12,681	27
	Guest houses	0.3	69	40,000	12,000	26
Food and beverages	Restaurant	0.3	33	24,000	7,200	16
Total					**46,248**	

Source: Author estimated data

Plastic Waste: Plastic waste generation by sub sectors is calculated as follows. Classified hotels contribute largely to the plastic waste generation counting 57 percent. Boutique hotels and guesthouses also generate a significant quantity of plastic waste accounting 31 percent. Other all sectors contribute only to 14 percent of the total plastic waste.

Table 32 Calculation of plastic waste

Sector	Sub Sector	Total annual plastic waste (kg)	Percentage
Accommodation	Hotel	18,250	57
	Camping	150	0
	Boutique hotel and guesthouse	9,857	31
	Homestay	1,560	5
	Traditional Food	990	3
Food and beverages	Restaurant	1,080	3
Total		**31,887**	

Source: Author estimated data

5. Waste Water

Responsible management of waste water is also an important factor in sustainable water use. However, entities poorly maintain records of water use and waste water generation in their different functions. The following estimation is done based on KII information. Assumption is that 70 percent of the total water use in hotels accounts as waste water while part of the waste water is collected in septic tanks with toilet waste. Treatable waste water quantity is calculated as follows.

Table 33 Calculation of waste water

Sub sector	Average water usage per month (m3)	No of entities	Annual Water usage (m3)	Total waste water (70% of the total water) usage) (m3)	Black waste water (m3)	Treatable waste water(80% of the total waste water) (m3)	Percentage
Hotels			31,938	22,356	4,855	17,502	6.2
Boutique hotel and Guest houses	242	115	334,105	233,874	50,784	183,090	65.2
Home Stay	128	52	79,560	55,692	12,093	43,599	15.5
Restaurant	169	33	66,825	46,778	10,157	36,620	13.0
Total			**512,428**	**358,699**	**77,889**	**280,810**	**100.0**

Source: Author estimated data

All most all classified hotels use waste water treatment methods. Again, threat of waste water is serious in guesthouses and boutique hotel sub sectors for two reasons; they contribute to nearly 65% of the total waste water generation and no or very less number of entities use treatment methods. Majority of them use open or septic tanks for waste water disposal. Re-use of waste water is not practiced which is also a bigger impact on natural water resource other than environmental damage done by waste water.

4.12 Gap Analysis

4.12.1 Quality tourism: gap between present and expected diversified experience

The existing tourism industry generates a certain number of benefits to the destination economically, socio-culturally and environmentally. However, to be a quality/sustainable tourism destination, it is necessary to have strong collaboration and networking among the key parties/areas the destination, like visitors, industry, community and the environment, to create a mechanism to welcome and satisfy the visitors since it is the key to the success of tourism operations. The visitors are somewhat satisfied and they are expecting more facilities and activities at the destination specially the sanitary, comfort and rest and relaxation, mobile connectivity etc. The value chain of the destination consists of different actors however, the actors are not getting sufficient businesses since there is a irregular arrivals. The industry is running at under capacity and it is hinder to have a profitable and prosperous industry. The tourists visit the Knuckles range is many due to its biodiversity, natural beauty and local community. It is noted that there are some activities both by the visitors and the industry destroy the natural environment and it is a big threat to the sustainability and also the visitor satisfaction.

The accommodation facilities are fairly satisfactory to the tourists and they can find accommodation from both formal and informal sector. Foods and beverages are one of the factors that affect for the tourist's satisfaction. However, most of the tourists at the Knuckles (specially at Reverston and Knuckles) faced difficulties to find foods and beverages. They can take the foods ordered from the village houses; however, it is necessary to have typical traditional foods. The visitor information, signage and directions are more important. However, it is no proper mechanism at the Reverston and Pitawala Pathana and most other destination to get proper interpretation. When the tourists are having village tours, and having trekking and camping it is necessary to have proper guide services and nature interpretation. it is necessary to have well trin an qualified guide.

The quality of experience at Knuckles (experience of attractions, services and activities) will lead the tourists satisfied. The satisfied tourist will revisit and recommend the destination for other and the gradually the tourist arrivals will increase with more benefits to have quality tourism industry. The visitor survey reveals that the repeating visitors of Knuckles is around 38%.

It is identified that the behaviour of some tourists negatively affects for the biodiversity conservation of the destination. The Knuckles range consists of so many endemic flora and fauna. Therefore, it is necessary to have a responsible consumption while balancing the environment sustainability. It is recorded that a large number of tourists visit the Reverston, Pitawala Pathana, Thengamuwa Oya, Sera Ella, Meemure etc. during the weekends and public holiday. Therefore, it has recorded a high traffic jam alone the roads which used by both visitors and the local community. It badly affects the visitor satisfaction and the community satisfaction as well as the environment degradation. Therefore, it has created a need for demand management programs though practicing the visitor management practices including visitor education. It is identified that a sizable part of the visitors are not nature lovers, the majority want enjoy their life at the destination and it is badly affected for the sustainability of the destination.

In this context, there are some important areas to to be considered in relation to the quality of tourism operations at Knuckles region as a ACE (Adventure, Culture and Eco) sustainable tourism destination, such as:

1. The biodiversity, heritage and community values should be considered as to ensure quality tourism operations in Knuckles region
2. The sustainability of the Knuckles region, in the long term, depends on the quality of visitor services, products, suppliers, and visitor/productive capacity
3. The biodiversity including its endemic flora and fauna a, quality of natural environment, community values are the key element to develop Knuckles as an eco, adventure, community heritage tourism destination
4. The qualified and competent human capital is compulsory to ensure Knuckles as a quality tourism destination
5. The collaborative and participatory decision making is a fundamental to the quality tourism operations in the region.

6. The level of innovation and creativity of product development should be integrated value to ensure the product quality tourism in Knuckles;
7. Management of Knuckles should identify the inevitability of the higher quality of social and communicational skills of the tourist to exhibit high-quality products

The above basic assumptions on quality tourism in Knuckles enable the empirical investigation to categorize the findings under key quality criteria, present status, level of functional value creation, and the prevailing gap in the value creation as given in Table 15 below.

Table 34 Quality tourism: gap between present and expected diversified experience

	Key Quality Criteria	Present Status	Prevailing Gap in Value Creation
1	Rich in natural resources with biodiversity	Not much polluted, preserved into some extent, and remain with biodiversity and ecosystem	Poor sustainable capitalization for value creation
2	The diversity of resources	Unique and more attractive for visitors	Lack of value creation through sustainable capitalization
3	Local community with rich social, cultural and heritage values and resources	Authentic and local culture and traditional livelihood attract the visitor, but deteriorate day by day	Lack of capacity, resources and empowerment to enter to the tourism value chain
4	The accessibility/ transportation	Considerably poor/ insufficient	Poor road network and absence of public and diverse mode of transport
5	It has unique and friendly climate	Amazing and pull the tourists	No proper mechanism to promote and attract the visitors
6	It is a clean and natural	Polluted and destroy the natural environment in some places	Absence of proper policies and poor involvement in destination management – waste collection

7	Traditional community and rich cultural heritage	Not well recognized and promoted	Lack of community empowerment, capacity buildings and DMO involvement
8	Welcoming visitors	Traditionally hospitality	Absence of community awareness and community capacity building
9	There are designated places for recreation activities	Insufficient, lack of facilities and guidance and maintenance	Poor coordination among the relevant stakeholders
10	They have attractive aesthetic and anthropologic resources	Many but not well explored and incorporated -story telling, heritage sites	Ignorance and inappropriate commodification of aesthetic and anthropologic values
11	Knuckles is an exclusive tourist destination	Mostly visited in weekends, public holidays and school vacations	Inadequate value creation and lack of visitor facilities – information, safety, sanitary
12	Market for local and traditional product	Very poor, visitors like but not available	Poor involvement of agencies, rigid policies, non-local intervention and inauthentic products merchandizing ruin the market for local products
13	Diversity and good quality accommodation services	Poorly defined insufficient	Lack of competency and capacity service providers and operators
14	Signage, signaling and directions	Insufficient, signboards are not available in the entire destination	DOF play the role well but Role of tourism management is missing for signaling/signage
15	Distinct models and designing of tours	More enroute visitors and partial orbit	Absence of full orbit, regional, multi-loop, fly drive tours to make it as tourist hub

16	The quality of dine, cuisine, food, diverse gastronomy makes it a distinct destination	Below average in the wayside. Not available in some sites	Lack of competency and capacity on F&B while absence proper business coach to guide the operators and service providers
17	Local livelihoods and traditional agriculture as tourism attractions	Introduced, but not well explored and exhibited	Poor accessibility, resources, poor merging and integration between tourism and traditional sectors
18	Connection with main routes other destination	Available but poor quality/maintenance	Poor coordination and involvement of DMOs/relevant organizations
19	Sufficiently available necessary infrastructures to enable the practice of tourism	Inadequate and unplanned	Absence of suitable and sustainably planned infrastructure development to cover entire destination region
20	There are various viewpoints and fascinating landscapes	Amazing, available throughout the destination	Poor identification and site management. Absence of mapping and include in the travel map with navigation
21	There are good networks and data bases of tourism agents in the country	Conventional marketing and communication	Absence vibrant network and marketing campaign to promote lesser-known places and new alternative tourism products
22	Safety and security	Average. there are many fatal accidents	Absence of proper guidance, directions awareness and misbehaviors of the visitors

4.12.2 Institutional framework: gap between institutional structure and transformation process of tourism value chain

The tourism industry in Knuckles range is mainly contributed to the value creation in micro level thorough the main actors, such as transportation, attractions, accommodation, food and beverages, activities and ancillary services contributed to the local value creation. However, there cannot see a proper coordination and collaboration among all the key stakeholders to have a well-established institutional framework to manage the destination sustainably youth, women, minority, and vulnerable groups.

Therefore, the meso level contribution for value creation is exit at a very weak level in Knuckles region, however, it need be happened through proper planning, organizing, designing and developing, quality management, and communication and marketing. Hence, the absence of well-established meso level value creation system resulted in the failure of the total tourism value chain in the Knuckles region.

In the macro level the public organization, agencies and institutions should involve to create an enabling business environment in which micro level actors can contribute significantly to the tourism development since the Knuckles region is a public property. Typically, the macro level of value chain of the Knuckles region consists of national, provincial (Dept. of Forest. Ministry of Tourists, DCC), (Ministry of Tourism/Central Provincial Council), the legal environment (acts, policies, Gazette notifications like No.1130/22 – 5th May 2000, No.1507/9 – 23rd July 2007). local governments and divisional secretariat offices (Rathtnota, Laggala, Ududumbara, Madadumbara, Panvila, Pathadumbara, Wilgamuwa, Minipe and Ukuwela). Also, it includes the major providers of public utilities such as water (NWSDB), electricity (CEB), roads (Ministry of Road), telecommunications etc. (SLT and other service providers). And other supportive education and counseling organizations (like, GAPEC Sri Lanka, Dumbara Mithuro, Sri Lanka Green movement etc.)

The macro level determines the general cost of doing business cutting across different value chains and sectors of the economy. These facilities/services are highly essential to create a conducive business environment in which all stakeholders like visitors, industry, community and others involving and contributing to the regional supply chain to generate values for mutual benefitting the. Also, the macro environment of Knuckles range is highly influenced by the factors and forces like political, economics, socio-culture, technology, environment and legal the crating opportunities and also threats. It is necessary to have a proper institutional framework to manage all these forces to have a successful business operation.

The involvement of the relevant government institutions to create a meso level tourism friendly environment is essential to get more benefits of tourism development to ensure a sustainability and inclusive growth. Since the absence of effective meso environment in Knuckles region, the actors at micro level play the major role in tourism operations in the region. For examples, the tour guides, hoteliers, travel agents, camping operators, trekkers, local community and the politician’s dominant role in tourism operations in the Knuckles destination. The Dept. of Forest, SLTDA and the Ministry of tourism of Central province involve in to some extent to manage the meso environment, however, it is not sufficient to maximize the value creation system to have an inclusive growth in which all parties are benefitting

This intensifies the need of establishing an appropriate institutional framework and network to enlighten the actors and agencies to create value at functional micro, meso and macro-level through formal channels to join the tourism value chain. This inevitably demands the role of management body to bridge all three levels of the functional value creation system. In light of the transformation process the Management with responsible for promoting the existing and potential tourism destinations in Knuckles region. They also play a major role in (i) planning of local tourism; (ii) protecting and preserving biodiversity and the natural environment; (iii) helping to protect local culture, customs and traditions and community livelihood; (iv) supporting business initiatives; (v) promotion of the tourism destinations and fomenting networking; (vi) coordination between public and private sectors; (vii) attracting funding, business, target markets, and specialized knowledge in the region under their supervision. For these reasons, it is important to understand the significance of the institutional structure, when developing a tourism value chain and how this will be reflected in the sustainability of Knuckles region which has a broad vision of sustainable development through Adventure, Community and Ecology (ACE). However, prevailing disintegrated and fragmented tourism operation resulted in many outgrowths that infringed the execution of sustainable tourism value chain. As per the above analysis tourism value chain in Knuckles struggle with many gaps due to absence of appropriate organizational structure as shown in the Table 16.

Table 35 Institutional Framework: Gap Identification

	Key Quality Criteria	Present Status	Prevailing Gap in Value Creation
1	Common/shared goal of sustainable Tourism development	Lack of shared goal among the key institutions, the Individual performance of operational organization	Absence of proper coordination, collaboration and moral obligation
2	Conservation and preservation of biodiversity and natural environment	Doing the main role by the Dept. of Forest	Committed by DOF, there is a lack of proper collaboration among other govt, private, NGOs other stakeholders are not integrated
3	Proper planning and marketing	There are some planning attempts and not comprehensive and proper integrated. Lack/poor marketing. Attempts by individuals	Lack of comprehensive and integrated planning and marketing programmed by the managing agencies and related organizations
4	Tourism operations in local villages and preservation of Socio-Culture	The local community involved in tourism Informally and unorganized way attracted a few numbers of tourists and irregular and insufficient	There is no proper mechanism to bring tourists to the surrounding villages. Socio-culture is not integrated formally with tourism operations
5	Community empowerment	Inconsistent and informal benefit sharing	Lack of proper programmes
6	Local economic development	Least contribution and informal sector of tourism	Absence of capitalization process of local human and physical capital

7	Women empowerment	Exist at very insignificant level. More participation informally and least unskilled participation formally with	Lack of proper programmes. Absence of inclusive growth approach
8	Youth empowerment	Least skilled formal participation and more unskilled informal participation	Lack of proper programmes. Absence of inclusive growth
9	Generation of business opportunities	Less innovation and mainly depend on selling tickets	Lack of micro level value creation and absence of capacity building
10	Role of public sector	Visible participation of DOF, Ministry of tourism/Central Province and lack of proper involvement of other public sector organizations	Absence of policy revision and delegation of authorities
11	Role of private sector	Insufficient participation, poorly organized	Poor incentives and motivation for local community
12	Role of Civil Organization	Active participation and work as presser groups	Less power for decision making. Poor recognition and community integration
13	Networking and communication	Depend of conventional communication and searching for network	Lack of capacity building and absence of bridging programmes
14	Formalizing of industry and suppliers	Very weak formalization process	Absence of business coaching. Lack of resources, and empowerments and capacity buildings
15	Synergy in physical infrastructure development and environmental quality management	Lack of participation of community and local operators	Absence of Destination Management to collaborate and perform

16	Synergy in human capacity building	Irregular and insufficient efforts	Absence of regular and appropriate training programmes
17	Merging traditional sector with tourism	Informally explored and incepted but formally established	Absence of alternative tourism programmes to integrate traditional sectors
19	Backward and forward linkages	Informally sound very good but formally not recognized well	Absence of formal participation of indirect suppliers/service providers
20	Public Private Partnership (PPP) or Public, Private Community Partnership (PPCP)	Not existing. but informally connected with government sector organizations	Absence of Destination Managment to collaborate and integration the public and private sectors and community

4.12.3 Exclusivity and Inclusivity: Gap in exclusive tourism practices and inclusive tourism value chain

When tourism is planned and development to anticipate the holistic desires and expectations of tourist, destinations and resorts are planned and developed exclusively. These destinations and tourism environments are usually termed tourism enclaves, which driven by non-local and governed by neo-liberal market economy. Thus, tourism in Knuckles also has been undergone a similar enclave and exclusive tourism to cater needs and wants of conventional tourism majority services and facilities and own and operated by external forces except in tourism operations in traditional villages. However, while being externally driven they are strongly based on certain kinds of local planning and governance modes of the tourism industry to support the local and regional development. As tourism enclaves contain all or a vast majority of the facilities, operations, and services needed for tourists and their enjoyment, local development, environment conservation, socio-cultural preservation, community empowerment and economic opportunities for locals are prevalently neglected. Consequently, local access to enclaves may be controlled or even prevented, and can be limited to working purposes only. In Knuckles region enclaves and enclavic processes separating tourism and tourists from local realities are commonly observed phenomena of tourism, especially tourism planning and development are dominated by the external forces and actors. This deprives the local community and other stakeholders through benefit sharing and power distribution of tourism industry. This has increased the power inequalities and unsustainable practices that can have serious negative impacts and trade-offs for local social and economic processes. These negative impacts and trade-offs can hinder the possibilities to use the tourism industry as a vehicle for development and a contributor to poverty alleviation. This crippled down the attainment the United Nations Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development. These exclusive tourism spaces are created and transformed that disconnect with local realities and inherent feature of Knuckles. Knuckles is a popular tourism destination located in a picturesque and environmentally sensitive rural landscape of Sri Lanka with higher percentage of socio-economically deprive local communities, along with sensitive natural and cultural environment. Negative impacts of exclusive tourism such as inequal power and benefit distribution, socio-cultural and environmental degradation, devastate sustainability of region drastically. Unimaginable marginalization of neoliberal exclusive tourism to be replaced with inclusive tourism as a valuable addition to the family of terms (e.g., responsible tourism, social tourism, peace through tourism, pro-poor tourism, accessible tourism) which constitute this field of scholarship. Inclusive tourism is meant 'transformative tourism in which marginalized groups are engaged in ethical production or consumption of tourism and the sharing of its benefits'. Sustainable development seeks to balance the conservation of environment, the promotion of economic growth, and the maintenance of social and cultural integrity, both in the present and in the future. Inclusive tourism is much focused on marginalized or vulnerable community who are deprived by economy and social injustice due to vulnerability and disability. In Knuckles region there is inequal distribution economic benefits, unlawful power structure of the industry, contextual barrier for disabled and unskilled people to enter into the industry led marginalize the people. Even though the local community involved in tourism operations in to some extent, they are not getting sufficient income due to various inherent limitations.

Particularly existing power structure of the industry penalize the community who involve at functional micro level value creation system. They are often dominated by the tourists guides and travel agents and well established and large-scale actors and organizations. Most of the scenarios confirms the passive participation of the marginalized community, even though they embrace with unique fascinating socio-cultural capital, which has more mis-utilized by the exclusive tourism operators. The vulnerability or disability of the people, erroneously capitalized non locally driven tourism forces. Although local community are owner and custodian of the tourism products, they are not given authority or power to fix the price or do the business as they wish. Often prices are fixed by the tourist guide or tour operators and they direct local operator.

As the tourism in Knuckles is mainly dominated by Dept. of Forest, planation companies and other big players; the rural women, youth, marginalized and other vulnerable groups are not considered as competent parties to enter to the tourism supply and value chain for mutual benefiting. This lead majority of the rural women and youth to join the industry informally through direct and indirect channels. This resulted in poor participation rural women and youth formal tourism value creation. However, increasing demand and growing trend for rural and rustic community lifestyle, livelihood and grass route culture of the community, began to emerge various tourism opportunities such as local cultural tours, livelihood exploration, experiencing traditional foods and beverages and Knuckles region. Yet, emerging adventure, cultural, ecological and community-based tourism activities are not formally absorbed into tourism value chain.

Access to the exclusive tourism disqualify the disabled people since considering disability as disqualification to join the industry to cater the enclave tourism. This led to marginalized further the people with disabilities. It is important to consider where disability and tourism fit within the broader sustainability agenda, as well as the need for accessibility and inclusion in tourism. In Knuckles regions people with disabilities are a historically excluded and socially marginalized group that lack power and voice. They have faced, and continue to face, barriers to their full and effective participation and inclusion in the community and in cultural life, whether that be the arts, sport and recreation. While tourism is considered an integral part of modern life, for people with disabilities, accessible or inclusive tourism encourage and intensify the participation of such people.

Table 36 Exclusivity and Inclusivity: Gap Identification

	Key Quality Criteria	Present Status	Prevailing Gap in Value Creation
1	Locals access to tourism	Plenty of opportunities are available but unable to capitalize them due some inherent limitations	Due to lack of proper planning and incentive programmes and the absence of integration and incorporation of local stakeholders
2	Benefit sharing of tourism	Less benefits shared by local operators.	Due to lack of proper planning policies, dominated and benefits decided by nonlocals
3	Ownership of tourism products/service	Majority of the large businesses are handled by nonlocals. Micro small businesses are operated by locals.	Due to lack of proper planning policies, lack of resources, knowledge, skills etc.
4	Local identity and representation in tourism	Exist at a significant level	Poor involvement of locals and lack of proper marketing and promotion
5	Community empowerment	Inconsistent and informal benefit sharing	Absence of proper policies and planning
6	Power distribution in operation	Dominated and decisions are made by non-locals	Lack of proper planning and policies; absence of capitalization process of local human and physical capital
7	Women empowerment	More participation informally and least unskilled participation formally with skills	Absence of inclusive tourism; lack of proper empowerment, capacity buildings and incentive programmes
8	Youth empowerment	Unskilled and informal participation	Absence of inclusive tourism; lack of proper empowerment, capacity buildings and incentive programmes
9	Participation of people with disabilities	Exclusive tourism more focused on quality and productivity not inclusivity	Absence of inclusive tourism; lack of proper policies, empowerment, capacity buildings and incentive programmes
10	Competency and capability of rural women, youth and PWDs.	Social stigma in recognizing rural people	Absence of formal awareness and capacity building programmes

SECTION V
STRATEGIC RECOMMENDATIONS

	Recommendation	Implementing agency
1	<u>Policy setting for inclusive and sustainable TVC</u> Policy provisioning Sustainable conservation of natural, cultural and historically built environment, develop infrastructures, and giving quality tourism experience while inclusion of local communities and vulnerable stakeholders.	Ministry of Tourism
2	<u>Establish policies and standards to promote only ecofriendly tourism projects</u>: Only eco-friendly tourism projects may be allowed in the Knuckles range by **introducing policies and standards** to ensure sustainable tourism where the environmental pressure of tourism is minimized for greater possible extent. A gradual transformation of existing tourism services also required to support the sustainable goals. **Technical assistances** are required for service operators to minimize the environmental impacts from hotspots of services as the initial step of this transportation.	Dept. of Forest
3	<u>Destination development and management plan</u> connecting all key stakeholders	Dept. of Tourism - CP
	<u>Integration of all tourism value chain through a unified body</u>: Tourism management system and resource ownership is complex as usual and it makes the management of these resources complex too. For example, in Knuckles region tourism management responsibility lies with Central provincial ministry of tourism while resource and site ownership is in the hands of department of forestry, wildlife and in certain cases under the purview of Central cultural Fund. Equally, basic infrastructure such as road development, utility supplies fall under different organizations where a wide gap could be observed in coming to consensus for a particular activity or a development. Therefore, strong and legally backed integration as well as **unified single body to manage and regulate such tourism resources and sites** could be more effective to serve emerging opportunities in timely manner. Equally, different administrative bodies, entities and organization could work on a common, collaborative and coordinated mission rather playing pin their own enclosed peripheries.	Dept. of Tourism - CP
4	<u>Establish a formal tourism consultative committee for department of provincial tourism</u>	Dept. of Tourism - CP

	Recommendation	Implementing agency
	With the participation of - Department of forest - Department of wildlife - CCF - Department of archaeology - Local authorities - Divisional Secretariat - Private sector (Actors & associations)	
5	**Strengthen the technical capacity of provincial tourism department** Include a technical director position in the carder of the provincial tourism department for oversight the tourism.	Dept. of Tourism - CP
6	**Restrict larger tourism projects in buffer zones of the natural environment**: Environmental impact is significant for larger tourism projects. Therefore, zones need to be allocated for large tourism projects (hotels) to prevent natural environment system – proposed zones would be Kaluganga, Hasalaka Laggala, Lulwatta, Ratota, Medawatta. Hunnasgiriya, Elkaduwa. Small operators may continue their services around attractions under close monitoring for best environmental practices.	Local Authorities
7	**Expansion and integration of ancillary services:** As evident from the survey, observation as well as KIIs the provision of ancillary services at Knuckles destination is moderate and over 30 percent survey respondents viewed that the services were poor. **Information services, signage, guiding services, basic utilities such as electricity, water,** telecommunication coverage with 4G and 5 G were of critically important for modern traveler. Specifically, since modern traveler is living in cyber communities and is online always such facilities are critically important at all sites. When the traveler is in a site or enroute the continuous update is a feature of young visitors and ancillary service facilities, photobooth and amenities are appealing for growing tourist markets. Equally, since modern visitor is looking for experiences and doing things rather viewing experienced based activity design is a must for destination facility development.	Department of Forest
8	**Vibrant Marketing and Communication**: Marketing communication was of poor quality and availability compared to many tourist destinations in the country. Knuckles region has a potential of gaining strategic importance for globally increasing nature tourists in a great deal. However, to reach out to such growing international market segments vibrant communication mix is mandatory focusing its key strengths and	SLTDA

	Recommendation	Implementing agency
	tourist resources. The focused marketing approach was observed to be based on traditional four Ps based where tourism marketing mix need extended seven Ps marketing mix approach incorporating people, processes and physical evidences in the marketing mix. This initiative is primarily important for facilities, services as well as hospitality ventures in the region. Thus, seven Ps marketing approach together with product improvement could ensure a vibrant marketing and communication strategy for the tourism resources in Knuckles.	
9	**Digital and social-media marketing**: Over 75 percent of the respondent in the survey noted that ranking in social media and in lonely planet was moderate or poor of Knuckles destination. The global marketing trend is digital tools, techniques and platforms and in tourism facilities and services are operated globally through few platforms such as Air BnB and Booking.com. SLTDA recently introduced an online tourism platform to cater local requirements while preventing currency outflow from the country. Large scale tourism facility operators were connected with global platforms where several small operators too found connected with international platforms for marketing their facilities. However, tourist sites were found poor in applying digital marketing as well as social media marketing which is extremely powerful at present. Thus, capacity development and awareness for social media marketing is a dire need at destinations.	Dept. of Forest
10	**Product Standardization**: (**Increase the number of SLTDA registered service providers)** As analysis of product standardization shown, sub sectors having high local participation are poor in market orientation. There are more improvements of product offering and competitiveness. Services are not standardized with proper registrations or certification. Registration of tourism services under SLTDA standards has not been successful as a mechanism of product standardization. Facilitation of the registration process should be further improved to encourage service providers with information, trainings, customization of standards to suit the local context, delivering the service efficiently etc. More importantly knowledge and skills development of operating staff of tourism services is essential to improve the service standards not depending on formal registration or certification. Associations of service providers and agencies hold an important role to identify capacity needs of service providers and coordination of agencies. - SLTDA registration	SLTDA

	Recommendation	Implementing agency
	- Membership in professional bodies and associations. - Since the Knuckles range is more popular for adventure types of tourism like camping, trekking, highking as well as bird watching, nature bathing etc., it is necessary to have well-trained guides, trekkers helpers, naturalists and nature interpreters.	
11	**<u>Promote lesser-known attractions and tourism activities to reduce pressure on crowded attractions</u>**: Reverston, Pitawalapathana, SeraElla and other few attractions are crowed mainly by local visitors. This is unacceptable for long run sustainability of those attractions. As an alternative, it is vital to identify and promote new and high value-added activities around attractions. Paragliding, water rides, spice gardens, estate culture experience, rituals etc. are some of the examples.	Dept. of Tourism
12	**Improve facilities and services at attraction:** Amenities and services were observed to be poor in provision and availability in Knuckles region and only available service was tour guiding. **Comfort center with quality sanitary facilities** indicated further development as indicated in the survey. Restaurants, communications, health care, handicrafts, local and convene at food and street food indicated poor appeal for visitors. - Comfort centers and sanitary facilities - Information - Security and lifeguarding - Waste management	Dept. of Forest
13	**<u>Designing and Development of Tourism Products to cater the Diverse Tourism Market Segments</u>:** As a sustainable destination, Knuckles region must be supported through diversified and differentiated tourism products from local destinations with their unique characteristics and competitive advantages. This would support all the first level and second level value chain to cater the diverse segments of tourism market through responsible tourism value. All the tangible and intangible natural and human geographic resources should be identified and listed out. Proper market research should be carried to understand the demand of each market segment to identify the target market to offer the most suitable product from Knuckles region. Different functional value creation systems along with primary and supportive actors would be integrated to enhances the satisfaction and quality of tourist experience. This would bring forth unique identity for the destination as well as for the value chain actors that support the region to anticipate the needs of sustainable development.	Dept. of Tourism

	Recommendation	Implementing agency
	- Village tours - Water rides - Estate tourism (sub-Indian culture)	
14	<u>Facilitate local service providers to integrate with other service providers</u> There is no active role of attraction agencies (dept of forest, estate companies) to integrate other tourism services with the visitors for mutual benefits of attractions and service providers. Dept. of Forest could play the coordination and information dissemination role through registration of service providers and promotion of their services. Site guides, trekking facilitators, local food providers and homestays could be easily promoted by the attraction management/agency.	Dept. of Forest
15	<u>Establishment of sustainable public transport systems to reduce GHG emission in transportation</u>: GHG emission analysis reveals that vans and cars sub sectors contribute largely to the total GHG emission. Per person higher GHG emission is recorded by cars whereas the lowest per person GHG is recorded by coaches. Use of coaches or similar higher capacity transport modes (trains or public buses) is environmentally friendly for tourism to reduce a sizable GHG emission. Possibilities are available for Knuckles to develop sustainable transport systems. Railway transport system which connects Colombo, Kandy and Matale could be used as a sustainable transport system for Knuckles tourism. There should be two developments to make this option a success. 1. Railway schedules and facilities should be customized with tourism orientation. 2. An efficient road transport system also should be developed between Matale/Kandy and Knuckles to connect Train passengers. Not only the train transport, on road public transport also could be used in the same arrangement of train transport. Currently transport system connecting Matale and Knuckles is so poor. However, authorities are bound with obligation to respond climate change and mitigation measures without fail.	Ministry of Environment
16	<u>Support transformation of conventional tourism projects/services to eco-friendly operations</u>: It needs policies, standards, incentive schemes and awareness programs to encourage and guide service providers to transform their operations from traditional hazardous operations to eco-friendly operations including designing, infrastructure development, energy, waste management etc. New projects in tourism services should be regulated for eco-friendly services while existing services are encouraged with incentives and technical assistance for adaptation. A green loan scheme would encourage service providers to	Ministry of Environment

	Recommendation	Implementing agency
	change their traditional systems into eco-friendly systems. Transformation of accommodation sector – specially classified hotels, boutique hotels and guesthouses is highly important for a larger impact.	
17	**Innovation and expansion of transportation:** Transport options to the tourist sites and facilities in Knuckles region were limited and the facilities provided were of poor quality as observed and evident in visitor survey. Of the total surveyed 89 percent of the visitors to Knuckles used public transport while 9 percent used own transport. Thus, strong focus on improving public transport and frequency of availability is pivotal for healthy tourism operations. Special tourist coaches, trains and environmentally friendly coaches are required to be in line with nature-based tourism operations in this area. Such innovative options specifically coaches run on renewable energy, purpose designed and decorated coaches for marketing destinations could facilitate marketing of destinations in social and digital marketing platforms.	Dept. of Tourism
18	**Diversification and expansion accommodation:** As indicated in the survey over 30 percent of the visitors viewed that accommodation facilities are moderate or poor in-service provision. Accommodation and F& B account for 90 plus percent and it just basic requirement provision, value added services and experienced based product development could further enrich the value chain while enhancing environmental and socio-cultural performance. Strategies should be crafted and implemented to design, promote and deliver local cultural, social and environmental based tourist experiences. Equally, guests stayed at lodges, tree lodges, youth hostels were minimal numbers irrespective of growing demand for such facilities. International network of youth hostels and volunteer, education tourists market expansion provided opportunities globally. Over 90 percent of the visitors responded negatively for availability of accommodation options and Knuckles tourism development need to consider this seriously in expanding accommodation facilities. Thus, accommodation sector needs to expand to cater such growing market segments.	Dept. of Tourism
19	**Innovation and increasing of tourist activities:** Of the total responses bird watching, community and culture and zip line activities showed very poor numbers irrespective of their appeal and significance in this tourist region. The traditional walk to Reverstone and Pitawala Pathana could be further developed with an enriched environmental experience and education. Diverse bio diversity, terrain and geomorphological	Dept. of Forest

	Recommendation	Implementing agency
	features of the region could further develop into the tourism product and signage, information, appointment of sites and site management could enhance the appeal. Basic facilities are being developed at Pitawala Pathana entrance yet forest department camping sites and well as nature-based sites could further developed following the appealing appointment of sites like Sembuwattha.	
20	**Market accessibility of local actors:** The biggest issue faced by the local actors at the Knuckles region is the lack regular businesses due to the irregular tourist arrivals in the region. It is noted that the villagers are ready to provide accommodation, foods and beverages and other services for tourists being the actors of the tourism value chain in the region. However, the lack of knowledge, skills and the poor infrastructure facilities in the region discourage the local community to involve in tourism value chain even plenty of opportunities are available in the region. Further, there is no proper mechanism to attract the tourists to region regularly. Therefore, the tourism operations I the region has become seasonal and the majority visit the region in weekends, holidays and during the school vacations. Therefore, it is necessary to have a well-planned sustainable marketing campaign using the cost-effective medias. Also, it is necessarily to have a common web page for Knuckles which should maintain and update regularly. At the same time, the micro level actors of the tourism value chain like travel agencies, tour guides, hoteliers and other parties can be obtained to promote the region for mutual benefitting. The lack of knowledge, skills and the poor infrastructure facilities in the region discourage the local community to involve in tourism value chain even plenty of opportunities are available in the region. Therefore, it is necessary to involve the DMOs including Ministry of Tourism of the Central Province, Dept. of Forest, SLTDA and other key government institutions (meso level) with consultation of private sector, volunteer organizations, local community etc. to attract more tourists and to ensure the participation of local actors in the tourism value chain in the Knuckles region to ensure the sustainability and inclusive growth.	Dept. of Tourism – CP
21	Innovations: Innovation provides renewals and changes in the goods and services in the tourism sector as it is in every area, facilitates the work of tourism employees, helps to promote and marketing the unknown and incorporates the customer into the production process. Tourism can take many different forms and types but increasingly it is viewed as one of the most innovative industries.	Dept. of Forest

	Recommendation	Implementing agency
	Tourism Innovation: Technology, Sustainability and Creativity addresse s the growing use and importance of tourism innovation in society. Th ere are a variety of tourism trends that are based on more general changes in consumer behaviour, like the need for healthy and organic food & drinks, sustainability, personalized service the rising demand for digitalization and the use of technology at present and tourism destination planning and development as well as service providers need to address these emerging trends at their facilities and destinations to be market responsive. Technology based services to overcome health challenges at present, - ICT driven improved services in booking, - que management, - online ticket purchasing, - payment gateways are mandatory options for Knuckles region to include. Addressing the needs of growing market segments, present global platforms, emerging trends such as youth hostels, renewable energy, innovative marketing and experience-based tourism, women empowerment through tourism are indispensable for responsive destinations where planners need to focus on.	
22	<u>Promotion of eco-friendly agriculture</u>: Though it has not been assessed comprehensively the agriculture impact on the natural environment of Knuckles, use of agro chemicals may have some impact on bio diversity and preservation of the natural environment. Organic agriculture could be promoted connected with the tourism aiming its positive impact on the natural environment. Intensive agriculture could be expected to expand in future in parallel with the social and economic changes.	Dept. of Forest
23	<u>Promote environmentally friendly best practices among visitors and actors:</u> Both visitors and operators/service providers are poorly oriented on negative environmental impact of tourism. An effective awareness campaign should be launched at higher level aiming perceptional change of all stakeholders of tourism towards. It is potential to reduce energy use, water use, waste generation and disposal and other harmful practices significantly through stakeholder awareness.	Dept. of Forest
24	<u>Capacity building of attraction management and service providers</u> Promote entrepreneurial skills of communities Adaptation of technology (online ticketing, tracking of visitors etc.) Visitor relations and communication	Dept. of Tourism - CP

	Recommendation	Implementing agency
25	**Capacity building of PWDs, Women and Youth:** There are more unemployment youths in the area since they cannot find suitable employment opportunities with the region and they migrate to the urban areas. However, they face lot of problem and difficulties to adopt to the urban lifestyle and it has become a major impediment for the socio-cultural sustainability. At the same time women, persons with disabilities, elderly people are facing inherent limitations in rural settings and they also have so many financial difficulties therefore, it is easy link them with tourism supply chain. - Handicrafts - Safety garments for trekking - Spices - Local foods - Site guides	Dept. of Tourism
26	<u>Enroll women and youth for vocational trainings</u> Hotel housekeeping Food and beverages Front office Bakery Language trainings Career guidance and attitudinal changing programs for secondary education system,	
27	<u>A site Guide service</u> should be established giving more opportunities for the village youths. These youth groups must be trained properly on • First Aids • Flora and Fauna specific to the area • Life Saving • Trekking • Hospitality Management • Other languages • Special training for a selected group in Trekking at night times	
28	**<u>Opportunities for Women and vulnerable groups to involve in formal tourism activities:</u>** The following opportunities are available for promotion of women and vulnerable groups' participation in the formal tourism. 1. The villagers in the Lakegala area are the expert in producing the food items using Madu Tree (Cycas nathorstii j.schust). This production should be upgraded.	Dept. of Tourism - CP

	Recommendation	Implementing agency
	2. There are vacated paddy fields and the uplands due to shifting of the villagers in to upgraded farmlands. These vacant paddy fields can be used for cultivation using traditional farming systems that can attract more tourist in to the area. The government institutions have to take policy decision to re-allocate this land only for farming activities in the tourism based activities. 3. There is a traditional living pattern in some villages. Heeloya hamlet is one of the best examples of such traditional living culture. This culture can be positively used for tourism. 4. It is suggested to establish village-specific cultural events targeting tourists' attractions. 5. Trekkers face leeches biting frequently. Hence, there is a high demand for protective socks for leeches, women could be trained for making protective socks. 6. The lifeguard service must be urgently introduced to bathing places as well as viewing locations such as Bambarakiriella, and Duwili Ella. 7. The risk maps, warnings, and the conditions of the visitors' routes should be clearly displayed for the visitors. 8. Community people should have a reasonable space in the proposed destination management system to raise their needs, issues and participate in the decision making. 9. Further, priority should be given to the villagers (Local Employees) in recruiting people for destination management and operation. 10. The physical disable persons in villages should be given priority in deploying staff for the ticketing counters that are located in the destinations.	
29	<u>Social protection</u> 1. Conduct awareness programs, especially to the youth groups of tourists' facility providers such as three-wheelers operators, Guides, Trekking Facilitators, and Camping facilitators on good hygienic practices and the dangers of sexually transmitted diseases such as HIV/AIDS. 2. Conduct awareness programs for the community on Gender-Based Violence (GBV), good hygienic practices, and the dangers of sexually transmitted diseases such as HIV/AIDS. 3. Introduce a code of conduct for the villagers who engage in different sectors of the industry to prevent alcohol and drug abuse, violence, sexual abuse, etc. 4. Continue consultations and interaction with the village community	Dept. of Tourism - CP

REFERENCES

ADTA, Towards a sustainable tourism destination: ADTA sustainability report 2009, ADTA, 2010, Abu Dhabi.

Aslam, M.S.M. (2004). An Empirical Study on Reasoning for and Determinants of Sustainable Tourism Development, A Case Study of Kandy, M.Sc. Dissertation Colombo: University of Sri Jayewardenepura.

Aslam, M.S.M. (2011). Role of Alternative Tourism in Rural Sustainable Development, Economic Review, 36 (11 & 12): 33-38.

Bandara, H.M. (2003). Tourism Planning in Sri Lanka, Colombo: Stamford Lake.

Buultjens, J. Ratnayake, I., Gnanapala, A. and Aslam, M., (2005). Tourism and Its Implications for Management in Ruhunu National Park (Yala), Sri Lanka, Tourism Management, 26: 733-742.

Central Bank of Sri Lanka (2020), Department of Census and statistics, Central bank Sri Lanka, Colombo

De Bruin, A., Nithiyanandam, V., Hall, C.M., Page, S. (2000). 'Tourism in Sri Lanka: 'paradise on earth''. Tourism in South and South East Asia. Oxford:Butterworth Heinemann , 235-247 Google Scholar

Dogan, H. Z. (1989). Forms of Adjustment: Socio-cultural Impacts of Tourism, Annals of Tourism Research. 16: 216-236.

Dowling. R. (2000). Sri Lanka and Maldives: Overview, in C. M. Hall. & d S. Page., (Eds), Tourism in South and South East Asia, 233-235, Oxford: Butterworth Heinemann.

EC, Methodological work on measuring the sustainable development of tourism. Part 1: Technical report, EC, 2006, Luxemburg. ISBN92-79-01680-6.003. ISBN: 1-881173-71-2

Ecotrans, Environmental initiatives by European tourism businesses: Instruments, indicators and practical examples. A contribution to the development of sustainable tourism in Europe, Ecotrans, 2006, Stuttgart

Engels, B. and Job.Hoben, B. (2005). Sustainable Tourism Development, in German MAB National Committee Full of Life: UNESCO Biosphere Reserves – Model Regions for Sustainable Development, pp: 67-69, Berlin: Springer Link.

European Commission EUR 26022 – Joint Research Centre – Institute for Prospective Technological Studies Title: Best Environmental Management Practice in the Tourism Sector Authors: David Styles, Harald Schönberger, Jose Luis Galvez Martos.

Gnanapala, W.K.A.C. and Aslam, M.S.M, (2000). Tourism Industry in Sri Lanka: Future Scenario, Economic Review, 26(June/August): 18-21

Government of Ceylon, (1966a). Ceylon Tourist Board Act No. 10 of 1966, Colombo: Government Press.

Government of Ceylon, (1966b). Ceylon Hotel Corporation Act No. 14 of 1966, Colombo: Government Press. Handaragama, S. (2010). Tourism and Gender Relation: A Sociological Analysis, Colombo: Sadeepa Publishers.

International, Tourism and biodiversity – Mapping Tourism's global footprint, CI and UNEP, 2003. ISBN: 1-881173-71-2.

International Finance Corporation (1013)) Ensuring Sustainability in Sri Lanka's Growing Hotel Industry

ITP, Environmental Management for Hotels, ITP, 2008, London UK.

Jafari, J., (1990). Research and Scholarship: The Basis of Tourism Education, The Journal of Tourism Studies, 1(1): 33-41.

Jayawikrama, A.J.M. (2000). Tourism in Sri Lanka Recent Trends, Economic Review, 26(2): 5-7.

Kelly, M. (1998). Jordan's Potential Tourism Development, Annals of Tourism Research, 25(4): 904-918.

Lanfant, M. F, and Graburn, N. H. H (1992) International Tourism Reconsidered: The Principle of the Alternative. In Smith, V. L., and Eadington, W. R. (Eds.), Tourism Alternatives. Philadelphia, PA: University of Pennsylvania Press. pp. 89-1 12.

Lillywhite, M., and Lillywhite, L. (1991) Low Impact Tourism. In Hawkins, D. E. and Ritchie, B. J. R. (Eds.), World Travel and Tourism Review: Indicators, Trends and -- Forecasts. Vol. 1. Wallingfold Oxon, UK: C.A.B. International.

Liu, A. (2006). Tourism in Rural Areas: Kedah, Malaysia. Tourism Management, 27(5): 878-889.

Lue, C. C., J. L. Crompton, and D. R. Fesenmaier (1993). "Conceptualization of Multi-destination Pleasure Trip Decisions." Annals of Tourism Research, 20: 289-301.

MacCannel, D. (1973). Staged Authenticity: Arrangement of Social Space to Tourist Setting, American Journal of Sociology, 79(3): 589-603.

Michael, G.K.A.D. (2000). Sustainability in Tourism Through Government Regulation Economic Review, 26(June/August): 8 - 13.

Mings, R. C. and McHugh K. (1992) The Spatial Configuration of Travel to Yellowstone National Park, Journal of Travel Research DOI:10.1177/004728759203000406Corpus ID: 154556116

Muthuraman, S and Haziazi, M. (2019) Smart Tourism Destination - New Exploration towards Sustainable Development in Sultanate of Oma, 5th International Conference on Information Management (ICIM)], DOI: 10.1109/INFOMAN.2019.8714652

Obeysekere, S., Colombo Gets Face Lift, The Nation, www.nation.lk 2011.06.05. Retrieved on April 10, 2022.

Saleem, N. (1996). A Strategy for Sustainable Tourism in Sri Lanka. in Briguglio L., et al. (ed). Sustainable Tourism in Islands & Small States: Case Studies, pp. 50–62, Pinter: London.

Samaranayake, H.M.S. (1998). Development Tourism in Sri Lanka and Its Impact on the Economy and Society, in A.D.V. de Indrarathna (ed), Fifty Years of Sri Lanka's Independence – A Socio-Economic Review, pp: 292 – 310, Sri Lanka Colombo: Institute of Social and Economic Studies.

Simpson, B. (1993). Tourism and Tradition: from Healing to Heritage, Annals of Tourism Research, Vol. 20: 164-181.

SLTDA, (2009). 10-year Tourism Master Plan for Sri Lanka, Sri Lanka Tourism Development Authority, News Letter, E-Bulletin, Vol – 5, 2009.

SLTDA, Annual Statistical Report, SLTDA: Colombo. 2019.

Smith, M., Hargroves, K., Desha, C., & Stasinopoulos, P., Water transformed – Australia: Sustainable water solutions for climate change adaptation. Australia: The Natural Edge Project, TNEP, 2009

Sullivan. K., de Silva, L., White, A.T. and Wijeratne, M. Environmental Guidelines for Coastal Tourism Development in Sri Lanka, Coastal Resources Management Project of The University of Rhode Island and the Coast Conservation Department: Colombo 1995.

Tantirigama, G. (1994). Tourism and the Economy of Sri Lanka, Economic Review, 20(5): 3-12.

Tisdel, C. and Bandara, R. (2004) Tourism as a Contributor for Development in Sri Lanka: An overview and a Case Study, Working Paper 094, University of Queensland: Queensland

UNDP/WTO, (1993). Tourism Master Plan - Sri Lanka 1992-2001, Madrid Nation: United Development Programme and World Tourism Organization

UNWTO, The Guidebook on Indicators of Sustainable Development for Tourism Destinations, UNWTO, 2005, Madrid.

World Tourism Organization and United Nations Development Programme (2017), Tourism and the Sustainable Development Goals – Journey to 2030, UNWTO, Madrid

ANNEXURES

Annex 1

Tourism in Sri Lanka

Though Sri Lanka has become a very popular destination in the modern era of tourism, the history of tourism in Sri Lanka traces back to the era of prehistory. Notably, some available records are; the ancient civilization of Mohanjo-daro Harappa, Chinese traveller Fa-Hien, (411 AD), Europe traveller Marko Polo (1292), and Arab traveller Ibn Batutah (1344) which prove the international relation with Sri Lanka (Nichols and Paranavitana, 1961). Further, Hulugalle (1999) recorded that the appearance of Fa-Hien – 414 AD, Cosmos, a Greek Merchant – 545 AD, Marcopolo 1293 AD, Odoric, an Italian – 1329 AD, Marignolli, a Christian Traveller – 1349 AD, Ibn-Batuta a romantic traveller 1344 AD, Ching Ho, a Chinese Admiral – 1405 – 1410 AD, Varthema a Portuguese Spy – 1505, Spilbergen, a Dutch Merchant – 1602 in Sri Lanka. Till the Englishmen conquered in 1796, many people stepped and invaded the country and named it in various ways. Greek astronomer Ptolemy compiled the map of Sri Lanka in the 2nd century labelling the island Tabrobane, Arabs named the island Serendib, Europeans Portuguese and Dutch named Seylan, and the British converted it into Ceylon, and finally, with the republican constitution in 1971, the island was renamed as Sri Lanka. Therefore, Sri Lanka is not a new destination in world tourism history. In mid-1960s tourism emerged as an industry in Sri Lanka, the need for the administration and professional operation was identified (Aslam, 2004) and in 1966 a regulatory body or the National Tourism Organization, Ceylon Tourist Board (CTB) was established under the Parliament Act no: 10 of 1966 (Government of Ceylon, 1966a) and Ceylon Hotel Corporation was established under the Parliament Act no. 14 of 1966 (Government of Ceylon, 1966b). Thereafter, the development of the tourist industry in Sri Lanka has taken place gradually (Jayawikrama, 2000). Meanwhile, another strategic mission of the government to induce the export revenue is the Foreign Exchange Entitlement Certificates Scheme (FEECS) and Convertible Rupees Account in 1963, which pushed the development of the tourist industry (Central Bank of Sri Lanka, 1998). Tourism was recognized as an indirect export and important foreign exchange earner (Jayawikrama, 2000). This situation enabled many new companies and ventures to penetrate the tourism industry and enjoy the privileges of the FEECS. When those companies were traditionally relying on export and import business, they faced problems due to import restrictions forced by the ruling government (Aslam, 2004; Bandara, 2003). Some of those companies are John Keels and Aitken Spence and George Stuarts. Later tourism became one of their major businesses and today these companies have major shares of the tourism market in Sri Lanka (SLTDA, 2009). Further, tourism development was strengthened by Tourism Development Act No. 14 of 1968 (Government of Ceylon, 1968). From this end, the government entailed planned development of the tourism industry. From 1966 to date Sri Lanka tourism has come through two 10-year master plans and one interim plan. Hitherto Sri Lanka depends on enclave type (Bandara, 2003) mass tourism is highly focused on tropical beaches around the destination. Prevailing tourism is large in volume but drives benefits only for the limited stakeholders such as hotel owners and a few indirect service providers and suppliers. The majority of the local community around the tourist facilities or inner parts of the country seldom obtain advantages from tourism. Since tourism facilities are owned and occupied by urban business giants (Liu, 2006), local communities refrain from sharing and participating in the existing tourism. At present, conflicts between tourist facilities and the environment, tourists and local communities, tourist facility owners and the government, and tourist facility owners and local communities interrupt the smooth growth of tourism.

Prevailing and Emerging Markets and Segments:

According to SLTDA (2018) overall, it is noteworthy that all regions showed significant growth in the number of tourist arrivals, except the Middle East region (Table III). Asia and the Pacific showed an increase of 3.5 percent compared to the previous year. Europe was the second major source market, recording a 20.8 percent increase compared to 2017. North America recorded a growth of 23 percent while the arrivals from the countries in the other category recorded a growth of 26 percent. It should be noted that on average, all regional markets, except the Middle East region, recorded an increase of 10.3 percent compared to the last year. An analysis of the ten major source markets revealed that tourists from India represented the largest number of international arrivals. China was recorded as the second major country of origin for tourists with a share of 11.3 percent in 2018. The United Kingdom was the third major source of tourists to the country (10.9%), while Germany (6.7%) and Australia (4.7%) become fourth and fifth in the top five markets. The top ten markets accounted for almost 68.1 percent of the total tourist traffic to the country in 2018.

Institutional Structure of Sri Lanka Tourism

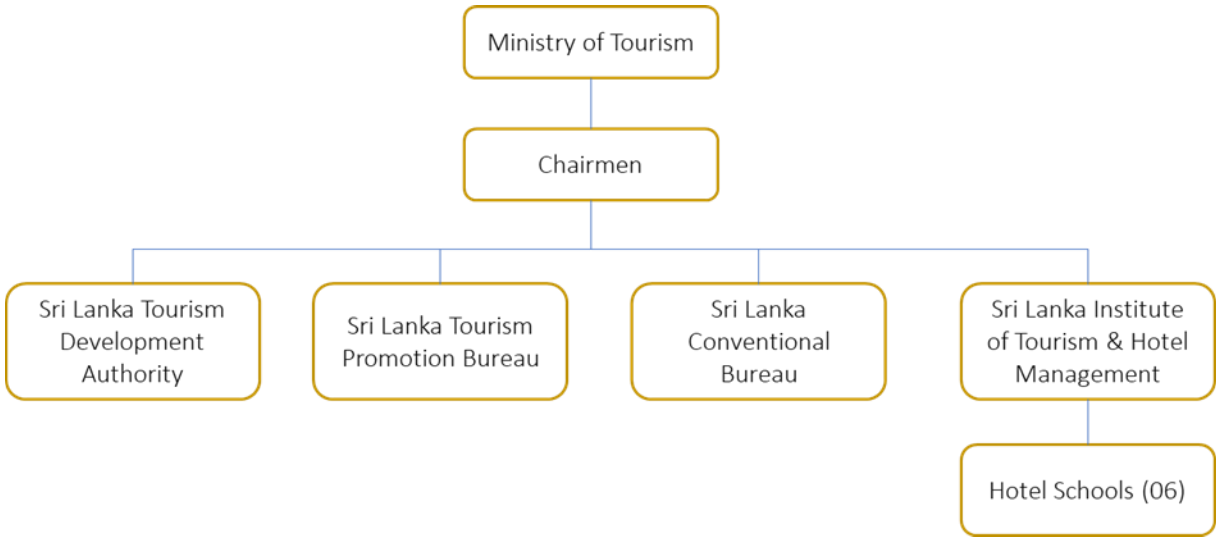


Figure 42 Institutional Structure

The above institutional structure has been adapted from the National Tourism Strategic Plan 2017 – 2021 which intensifies the revitalizing of national-level tourism institutions to meet core responsibilities more effectively and efficiently; establish a more whole-government consultative, cooperative, coordinated framework for tourism at the central level and with provincial and local governments; strengthen consultation and cooperation with the private sector the institutional structure; enhance businesses and investment, especially SMEs. To improve the institutional structure, they have identified a few strengths such as strong funding and empowerment of national tourism institutions in some areas, for example; marketing, strong private sector entrepreneurship and institutional framework, and large public landholding and extensively protected natural and cultural heritage areas. Meanwhile, they also have highlighted a number of challenges as follows:

- The multiplicity of government agencies with sole or shared responsibilities for important aspects of tourism
- Further fragmentation between national, provincial, and local levels of government
- Silo's approach within tourism institutions, leads to inefficiency and duplication
- Inadequate planning, development, regulation, marketing, and HR training in the public sector
- Lack of consultation, cooperation, and coordination within and between all levels of government and with the private sector

- Impediments to business and investment
- Many unregulated tourism businesses can contribute to risks to safety and reputation

According to the prevailing institutional structure of Sri Lanka tourism is embracing many shortfalls and dilemmas in adapting a holistic national approach and curtailing the value creation of tourism through local and provincial tourism stakeholders' integration and collaboration. Expanding and revitalizing the institutional structure would be inevitable to improve and establish the tourism value chain at local destinations. Knuckles range is a major biodiversity hotspot in the country and it has a great potential to promote sustainable tourism development. The diverse stakeholders involved in its operations like the Dept. of Forest, Ministry of Tourism of the Central province, SLTDA, Ministry of Tourism, NGOs, etc., requires to have a well-established institutional structure for systematic value creation to ensure sustainable development.

Annex 2

Impacts of Tourism on the Environment, Economy, and Socio-culture of Rural Sri Lanka

The tourism industry is always determined by its externalities, which generate significant positive impacts as well as negative impacts on socio-culture, environment, and economy. Accordingly, Sri Lanka also pays significant attention to both positive and negative impacts of tourism. Impacts of tourism have fallen into various criticisms and arguments among the general public since tourism is the third-largest foreign exchange earnings which holds a strong contribution to GDP. Moreover, the impacts of enclaved mass tourism on rural fabric are unpreventable even though rural areas have not been taken into consideration for conventional tourism development. The negative impacts overwhelm the positive impacts of mass tourism (Kelly, 1998) in adjoining rural areas. Tourism causes a number of positive and negative economic, social, cultural, and environmental impacts on Sri Lanka (Dowling, 2000) and they are well recorded and addressed by many authors (SLTDA, 2018; Handaragama, 2011; Mackee et al., 2007; Tisdell and Bandara, 2004; Aslam, 2004; Bandara 2003; Bruin and Nithiyanandam, 2000; Dowling, 2000; Samaranayake, 1998; Tantirigama, 1994; UNDP/ International Labour Organization - ILO, 1992). Usually, the decisions of tourism development and acceptance recline stand between negative and positive impacts. Existing negative image in conventional tourist sites constraints pushing the tourism into hinterlands in Sri Lanka. However, there are specific positive and negative impacts that critically affect the rural environment, economy, and socio-culture of Sri Lanka.

Employment Generation: Direct employments generated by the tourism industry was 173,000 in 2019. Of the total tourism-based direct employment in 2019, 81 percent were employed in Hotels and Restaurants. Travel Agents & Tour Operators accounted for 7 percent of the total, Airlines 5 percent, Guides 3 percent, State Sector 2 percent, Tourist Shops 1 percent, the Agencies providing Recreational Facilities 1 percent and the National Tourist Organization 0.5 percent. A classification of the total number in employment by broad occupational categories shows that 14.8 percent belonged to managerial, scientific and professional grades, 51.5 percent to technical, clerical, allied and supervisory grades and 33.7 percent to manual and operative grades (SLTDA 2019). As published in Annual Statistical Repot of SLTDA 2019, the estimated total number for indirect employment engaging in ancillary industries such as the handicraft trade, gems and jewellery shops, liquor shops laundries, etc. was 229,000. Therefore, the total number in employment, both direct and indirect, in the tourism sector in 2018 can be estimated as 402,000 (Annual Statistical Report SLTDA 2019)

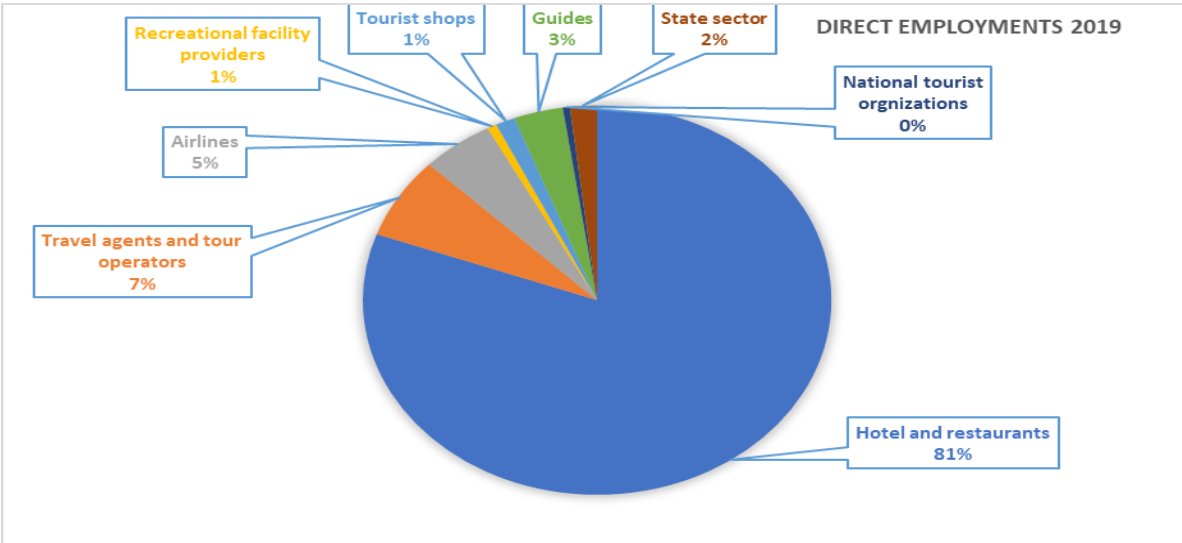


Figure 43 Direct employments – tourism industry
Source: SLTDA statistics 2019

Positive Environmental Impacts: The quality of natural landscapes and countryside determines future tourism (Engles and Job-Hoben, 2005) despite redesigned and modified environments. In 1830, most of the sanctuaries were converted into National Parks since tourism raised the value of preserved and conserved natural attractions (Buultjens et al., 2005) and opened for tourists. On one hand, tourism has raised awareness about environmental pollution, and on the other hand, stakeholders try to prevent and control environmental pollution to accommodate more tourism. For example; the 'Clean City and Green City' Campaign in Colombo focuses on tourism development, which enabled the city to upgrade (Obeysekera, 2011) unbelievably. These positive environmental impacts would be ignored by the rural communities when they can not overcome the survival challenges through tourism.

Positive Economic Impacts: Since tourism is recognized as an indirect export, earning foreign exchange is the primary objective of the tourism industry in Sri Lanka (Jayawikrama, 2000). In 2018, the tourism industry was able to generate Rs. Rs.711,961 million (US$ 4,380.6 million) foreign exchange earnings and surpass Rs. 598,143 million (US$ 3,924.9 million) in the previous year 2017 with a 62.3 percent increase (SLTDA, 2018). The hike in foreign exchange earnings enabled the industry to reach the fifth rank and contribute to 2.1% of total foreign exchange earnings (SLTDA, 2018). However, prevailing conventional mass tourism prevents local product consumption and pushes back the major percentage of foreign exchange earnings out of the country. The tourism industry in Sri Lanka generates revenue for the government in many ways: selling entrance tickets at forest reserves, museums, cultural triangle, botanical gardens, wildlife parks, zoological gardens, revenue from conferences and events at BMICH, tourism development levy, earning of tourism development authority, and embarkation tax (SLTDA, 2018). In 2018, the revenue collected from the listed sources amounted to Rs.12,873.2 million, compared to Rs.11,767.6 million collected in the previous year. Out of the total revenue collected in 2018, the top three contributors were; Cultural Triangle Entrance Fees – Rs.4,200.1 million, Embarkation Taxes – Rs.2,824.9 million, and the Wildlife Parks – Rs.2,138.4. The revenue earned from Tourism Development Levy was 1,482.1 million while the Zoological Gardens, Botanical Gardens, and BMICH also contributed considerable amounts, recording Rs.698.8 million, Rs.673.4 million & Rs. 464.8 million respectively. The Government earns a substantial amount of income in addition to the above revenue as indirect taxes such as taxes from electricity, water, mail services, telecommunication, lease rentals, etc.

Although revenues are collected through a centralized system and added to national income, the prevailing system doesn't provide any revenue for local socio-economic development directly. In Sri Lanka, a widely expected and accepted economic impact of tourism is the contribution to employment generation (Bruin and Nithiyanandam, 2000). In addition to direct employment, it provides a large number of indirect employments (Bandara, 2003) through its forward and backward linkages (Aslam, 2004). The total number of establishments covered in the 2018 survey was 3,926. The total number of employees in these establishments amounted to 169,003 as compared to 156,369 in 2017. This was an increase of 12,364 (8.07). Substantial increases were recorded in all categories of establishments (SLTDA, 2018). However, a poorly developed tourism value chain along with lack of accessibility and inadequate capacity are the crucial barriers for rural masses to find good jobs in the tourism industry. The Tourism Master Plan 1992 – 2001 expects to develop and promote sustainable tourism in other parts of the country away from the coast (UNDP/WTO, 1993), but it is difficult to understand the impacts on regional development easily (Bruin and Nithiyanandam, 2000).

Even though the tourism industry plays a key role in its economy, rural sustainable development has not been integrated with the tourism industry sufficiently (Aslam, 2011).

Positive Socio-cultural Impacts: Tourism is the major source of inter-cultural contact (Dogan, 1989). Interacting and meeting different human beings improve the understanding of the plurality and diversity of the world. However, as the enclaved tourism development discourages the participation and integration of the local community, the tourism industry has failed to improve the social harmony among the rural community in Sri Lanka (Handaragama, 2010). “An important item in the portmanteau of ideas and expectations carried by tourists to faraway places is that one learns something about the host society” (Simpson, 1993:166). Experiencing local socio-culture is a valuable addition to the foreigners to enrich their contended holidays in Sri Lanka. Conservation and preservation of archaeological and cultural monuments in Sri Lanka are supported by the tourism industry (Bandara, 2003). The socio-culture, customs, traditions, and other anthropologic aspects, etc. stand a crucial status in broadening the tourist holiday experience while helping the community to conserve and preserve the traditions and culture in addition to sustaining their livelihood. Yet, enclaved mass tourism has led to duplicating and imitating the native rural socio-culture as stage authenticity (McCannel, 1973).

Negative Environmental Impacts: As coastal and urban-based enclaved and conventional mass tourism induces land zoning and deforestation. Very large useful lands have been divided into small portions and this has led to the deterioration of the land utility in Sri Lanka (Bandara, 2003). The absence of planning and overcrowding claims severe environmental destruction (Buultjenns et al., 2005; Sullivan, 1995). In addition, Michael (2000) and Saleem, (1996) argue that the delay in planning, implementation, and carrying capacity management causes serious destruction to places such as Horton plains, and Negombo. As the indirect and induced activities often increase the population and demand, a higher consumption of the environment (Michael, 2000; Sullivan, 1995) occurs. This encourages the urbanization of rural areas indirectly and leads to the deterioration of the countryside.

Negative Economic Impacts: As the tourism industry depends on conventional mass tourism (Aslam, 2004; Bandara, 2003), it requires massive tourism amenities and accessibilities to cater to a large volume of tourists. In addition, the industry has to undergo many constraints and return a portion of income as the remittance of foreign investment (Bruin and

Nithiyanandam, 2000). Seasonality and fluctuation in tourism create an unstable condition, which leads to unemployment, and inconsistent income for the host community in Sri Lanka (Bandara, 2003). Relying on the unstable livelihood has led the community to face survival problems and, increase the dependency syndrome (Bruin and Nithiyanandam, 2000) over the tourism. Agricultural and other native livelihoods have been shifted to a tourism-centred livelihood (Aslam 2004; Bandara 2003) due to the dependency on mass tourism (Tsung-Wei Lai, 2002).

Negative Socio-Cultural Impacts: As noted by Bruin and Nithiyanandam (2000:243) "unfortunately, as long as twin force of the demonstration effect leading to imitation and even romanticization of the lifestyle and 'culture' of the tourist". Depending and expansion of mass tourism overturned into a situation, worse than the colonial period. These demonstrations and imitations have affected the traditions, customs, social values, spiritual values, simplistic and authentic native lifestyles, peace and harmony in the society, and law and order of the country (Dogan, 1989; Michael, 2000). Gradually, parental poverty, demonstration, and imitation (Bruin and Nithiyanandam, 2000) impacts have misguided the youth (Handaragama, 2010) towards various corruptions and criminal offences. Aslam (2007) criticises the commodification of Kandyan dance (Figure: 3.18) while Simpson (1993:167) records the staging of Low country dance (Mask dance) as "anyone can respond at some level to dance, irrespective of its intended meaning; dances which heal become dances which entertain". Enclaved tourist sites and packaged round tours are expected to satisfy tourists as their wish, at convenient times and convenient places.

Annex 3
Tourism Performance, Practice, and Process

The tourism industry has become one of the key economic activities globally due to its valuable contribution as a global phenomenon. According to UNWTO (1994), tourism is the set of activities engaged in by persons temporarily away from their usual environment, for a period, not more than one year, and for a broad range of leisure, business, religious, health, and personal reasons, excluding the pursuit of remuneration from within the place visited or long-term change of residence. It is a product amalgamated with various components such as attractions, accessibilities, amenities, accommodation, activities, and ancillary services (Muthuraman and Haziazi, 2019), these are owned or managed by different institutions and individuals. Yet, inherent characteristics like "intangibility" and "inseparability" of tourism products do not allow to act alone to serve the industry. All the businesses need support from other businesses and for this reason, they need to work together in harmony. To create a bond among all the stakeholders of tourism there is no alternative for Value Chain and Supply Chain Management. Hence, the output of the tourism industry entirely depends on the collaborative and integrated effort and contribution of a wide range of different stakeholders. On the one hand, this enables the tourism industry to embrace the longest supply chain through backward and forward linkages. On the other hand, an expanded supply chain enhances the value chain of tourism to enrich the quality of tourism (Dailyfit, 2019). Participation and collaboration of diverse components in the supply chain led to adding more and more values for tourism in a destination. This embarks plentiful opportunities for people to live in urban and rural landscapes. Jafari (1992) summarizes these differences as four ''platforms.'' The first is (in Jafari's terminology) the ''advocacy'' platform, which focuses on tourism's contributions to job creation and economic development. The ''cautionary platform'' takes an opposing view by pointing out the costs of tourism. The ''adaptancy'' platform recognizes both benefits and costs of tourism and argues that proper planning and management can ameliorate problems while still achieving the benefits of tourism. Finally, the ''scientific'' platform focuses on the objective understanding of tourism as a phenomenon.

The World Travel and Tourism Council frequently cites tourism as ''the world's largest industry''; a collection of tourism businesses that meet these criteria. Hence, tourism would include the elements of movement (transportation), remaining temporarily in one place (such as staying in accommodation), being entertained, and consuming food and drink as aspects of tourism. There is no obvious logic that one can use to meaningfully aggregate these diverse products into a single generic product that would characterize something called the tourism industry. Particularly, responsible or sustainable tourism value chains are generated for rural and far remote regions beyond popular enclaved conventional tourism resort regions. Thus, a responsible or sustainable tourism value chain would facilitate the country to attain the 17 Sustainable Development Goals through numerous avenues.

Annex 4
Mode of Tourism Operation

Mings and McHugh (1992) identified four types of touring routes: The **‘’direct route’’** is the itinerary that takes a direct path from and to (a specific destination); The **‘’partial orbit’’** itinerary consists of taking the most direct route to a main destination area on a touring loop in the area following the same route in both directions; the **‘’full orbit’’** tour itinerary involves visiting a number of destinations with no overlap in the tour route; The **‘’fly-drive’’** itinerary is similar to the partial orbit itinerary except that the mode of transport used to reach the touring area is different. Instead of driving to the regional destination, tourists fly and then embark on an orbit tour. Lue, Crompton, and Fesenmaier (1993) focused their research on multi-destination trips that lead the tourists to embark on single-destination, direct-route trips. They described four types of multi-destination itineraries were described: The ‘’en-route’’ itinerary recognizes that individuals may make a number of shortstops on their way to or from the main destination with possible detours to nearby destinations; The ‘’base camp’’ model represents a further elaboration of the single-destination model that resembles a hub and spoke. Tourists base themselves in one main destination and then venture out from that destination in a series of short-day tours to nearby attractions and destinations: In the ‘’regional tour,’’ tourists travel to a destination region, but rather than basing themselves in one locale, they stop overnight in several places in a sequential pattern before returning home; The ‘’trip-changing’’ pattern involves a multi-focus touring trip visiting a number of destinations without overlapping any leg of the trip.