CHALLENGES AND OPPORTUNITIES FOR ECOTOURISM DEVELOPMENT: A STUDY IN THE POST-WAR CONTEXT IN THE NORTHERN PROVINCE OF SRI LANKA

Cabaran dan Peluang kepada Pembangunan Eko-Pelancongan: Satu Kajian dalam Konteks Pasca- Perang di Wilayah Utara Sri Lanka

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ABSTRACT *Following several decades of political unrest, the northern province was finally opened for visitors. There are hundreds of novel opportunities available for ecotourists that they may have never experienced before. Nevertheless, the northern province had not achieved its optimum level in terms of ecotourism due to several reasons. A one-year study from January to December 2020 was conducted to investigate the available opportunities, resources, and challenges. Primary data were collected through an online questionnaire survey and occasional visits to the area and secondary data were gathered from the internet, published research articles, scientific reports, provincial council reports, and data from government institutes. Qualitative descriptive statistics were used to analyze the data. The majority (72%) answered that there is a great potential to develop the province as an ecotourism destination. However, the majority replied that several challenges exist including lack of infrastructure, lack of institutional and community participation, lack of transportation facilities, less popularity, lack of accessibility, and lack of awareness. According to the secondary data, there are numerous opportunities and resources available for ecotourism including wildlife areas, forest reserves, cultural places, traditional dancing, and foods. Hence, proper planning involving all the stakeholders should be implemented to overcome challenges and promote the northern province as an important ecotourism destination in Sri Lanka.*

Keywords: Challenges, ecotourism, northern province, opportunities, post-war

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1. Introduction

As a destination, the northern province had rather become less popular compared to the other parts of Sri Lanka due to the long period of armed conflict. With the end of thirty years of a dark period, the northern province has been listed as an emerging destination (Sivesan, 2020) with numerous novel opportunities. The province has a rich biodiversity, cultural heritage, historical places, and natural landscapes (Weerakoon et al., 2020; Aloysius et al., 2022), that create hundreds of new experiences for ecotourists. However, many places are still away, and difficult to access for ecotourists and rather they are less popular among them and tourists tend to stay away due to fear of past experiences. Hence, it is clear that the past time period of political instability was not favorable for the tourism in the country (Fernando et al., 2013; Fernando & Shariff, 2013), particularly in the northern province (Mathivathany, 2012; Mathivathany, 2013; Ranasinghe, 2019; Aloysius et al., 2020). Nevertheless, at present, the northern province has become one of the significant and fast-growing parts of Sri Lanka. However, rural communities that sustain by traditional livelihoods such as agriculture, fishing, and sustainable collections of materials from forests are facing various challenges in keeping up with rapid development (Fleischer & Felsenstein, 2000; MacDonald & Jolliffe, 2003). Especially the post-war regions like the northern province are thus facing numerous challenges to get with present socio-economic development such as making employment opportunities and enhancing the well-being of people who had long been suffered from the war (Wickramasinghe, 2013; Pieris, 2014). Therefore, ecotourism as a widely recognized term in sustainable tourism (TIES, 2010), provides a base for the sustainable development of the northern province preserving its splendid and priceless natural, cultural, and historical values. Moreover, ecotourism is ideal as a niche market (Weaver, 2001), for reducing the negative social, economic, and environmental impacts that are usually associated with mass tourism (Cristina, 2004; Lai, 2002; Perera, 2011; Dahanayaka et al., 2015), hence it is suitable for the sustainable development concept too (Perera, 2011; Wickramasinghe, 2013; Dahanayaka et al., 2015). However, there are many challenges that exist to implement the ecotourism projects under the post-war development in the northern province.

Although the Sri Lankan tourism industry had shown a sharp increase after 2009 following the end of the political unrest (Fernando et al., 2013; Wickramasinghe, 2013; Ranasinghe, 2018), the northern province on the other hand performed far below it potential (Aloysius et al., 2022). Further, even though the northern province has a vast eco-destination, the present contribution to the ecotourism income is low compared to other parts of Sri Lanka (Ranasinghe, 2019). Most of these places are relatively underexploited and characterized by a smaller number of visitors (Butler, 1980) and may provide experiences that ecotourists never had before. Moreover, tourism can act as a driver of peace in the way that people understand and have positive interactions (Weaver, 2011). Nevertheless, tourism in the north is in the initial stage and not well organized (Ranasinghe, 2018; Ranasinghe, 2019; Aloysius et al., 2020). Therefore, it is pragmatic and necessary to identify the challenges and opportunities within the area prior to implementing such programs.

However, there is a lack of studies on the tourism field due to the past 30 year's inaccessibility to the area. Hence, the present study focuses on discussing the challenges and opportunities that exist for ecotourism development in the post-war context in the northern province of Sri Lanka. This endeavor will pave the way to the future ecotourism development in the northern province.

2. Literature Review

The term "ecotourism" was initially introduced by Romeril in 1985, and later the concept became popular among the people with Elizabeth Boo (1990)'s publication "Ecotourism; the potentials and pitfalls". Ecotourism is one category of sustainable tourism which promotes sustainable development thus it aims to achieve social and environmental goals in addition to economic goals (Perera, 2011; Wickramasinghe, 2013). Ecotourism is one of the fastest-growing segments in sustainable tourism (Tisdell, 2003). Conservationists and wildlife managers have implemented ecotourism as a tool for the conservation of biodiversity and natural resources (Das & Chatterjee, 2005; Mondino & Beery, 2019). It is a model for future tourism development that minimizes the negative impacts (García et al., 2013), and provides both economic and ecological benefits to destinations (Newsome et al., 2002). It plays an important role in the national economy, job creation, and environmental conservation (Ramzani & Gouraei, 2003). Ecotourism has been defined by different people in different ways. In 1983, Hector Ceballos-Lascurain defines the term ecotourism as ''traveling to relatively undisturbed or uncontaminated natural areas with the objective of studying, admiring, and enjoying the scenery and its wild flora and fauna and any existing cultural significance'' (Ziffer, 1989).

The earliest formal definition of ecotourism is found in Elizabeth Boo's publication published in 1990 (Boo, 1990). It defines ecotourism as "tourism that consists in traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, enjoying the scenery and its wild plants and animals, as well as exiting cultural manifestations (both past and present) found in these areas. According to the International Ecotourism Society (TIES) 1990, ecotourism is "responsible travel to natural areas that conserves the environment and improves the well-being of local people". Honey (1999) has proposed seven characteristics while three have been emphasized including travel to the natural destinations minimizing the impacts, biodiversity conservation and local people involvement. Even though there are numerous definitions, there is a generally agreed framework of principles exists (Perera, 2011). Ecotourism has been promoted with comparative advantages in abundant natural, scenic and cultural resources as an alternative to extractive use of natural resources (Che, 2006).

Ecotourism had grown by 30% between 1990 and 1995 (Fernando & Shariff, 2017). Hence, ecotourism has become an effective tool to protect natural resources especially protected areas which provide suitable settings for ecotourism development. It is clear that over 90% of ecotourism operations are carried out in protected areas

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(Kinnaird & Obraien, 1996; Li et al., 2018). Both developed and developing countries are using ecotourism for the conservation of natural resources in protected areas. For instants in Iran, villages have been encouraged to participate in rural tourism schemes that would help to overcome their poverty and improve the local infrastructure (Ghaderi & Henderson, 2012). Ecotourism is used as a tool in China's nature reserves to increase economic growth (Feyers et al., 2017). In Sabah in Boneo, the mount Tambuyukon within Kinabalu Park has been identified for ecotourism development with the objectives of conservation, physical infrastructure development, carrying capacity, and participation of local communities (Er, 2014).

Most countries have focused on ecotourism development after identification of its importance such as Costa Rica, South Africa, Galapagos, Trinidad, Kenya, and Colombia (Honey, 2008). It is recorded that more than 40% of United States people engage in some form of ecotourism (Che, 2006). In British Columbia, 25% of tourism operators would be classified as ecotourism operators (Bottrill & Pearce, 1995). Ecotourism has generated jobs for Aboriginals providing investment opportunities, support unities, supported small-scale, family-based operations, and selling arts and crafts (Altman & Finlayson, 1993). In northern Canadian forests that provide opportunities for sport hunting and fishing can offer new ecotourism destinations (Che, 2006). New Zealand's urban areas and nature-based settings have a potential for ecotourism (Higham & Luck, 2002). Therefore, many countries have identified landscapes for ecotourism as what Ayala (1996) calls "place products". In the Eifel-Hohes Venn region of Belgium and Germany, tour operators have developed environmental-friendly tour packages in such place products.

In Phuket, Thailand due to many environmental impacts of conventional tourism, it has led to the establishment of nature-oriented tours. With that initiative, in 1989, an American expatriate named Joh Gray, with Thai partners formed Sea Canoe which is the first marine ecotourism company in southern Thailand (Kontogeorgopoulos, 2005). However, tourism policy in Kenya has a limited understanding of environmental issues leading to challenges on ecological aspects (Kitheka & Backman, 2016). Hence, a collaborative approach is necessary for building consensus between the stakeholders (Sheppard & Fennell, 2018; Kenawy & Shaw, 2014). It is important to quantify ecotourism potential, facility management, value of attraction, environmental concern, and local people's attitudes before making some issues for ecotourism initiatives (Tseng et al., 2019). Some countries encounter challenges due to a lack of community participation (Azcarate, 2010; Tekalign et al., 2018; Adom, 2019), absence of environmental management plan (Hong & Chan, 2010), lack of environmental education and awareness (Mondio & Beery, 2019), and lack of proper infrastructure (Hvenegaard & Dearden, 1998). Nevertheless, many countries gained success in ecotourism development through active community participation and awareness. For instance, the community forest program in Tumani Tenda mangrove edge tributary village in the Gambia has reached the expected results (Jones, 2005).

Ecotourism had been introduced to Sri Lanka in 1980 with the purpose of conservation of nature and improving sustainable tourism (Sri Lanka Tourist Board, 1995). Having been blessed with various ecological and favorable climatic conditions on

relatively a small island, Sri Lanka possesses a unique potential for ecotourism (Wickramasinghe, 2009). However, Sri Lanka at present contributes far below its potential for ecotourism (Ratnayake, 2007). Despite its significant potential, Sri Lanka has failed to capitalize on this concept (Bandara, 2009), thus various organizations have operationalized the ecotourism concept differently (Pathmasiri & Bandara, 2019). Therefore, the majority of them can be placed into the category of nature-based tourism and a few combinations of nature and adventure-based tourism but not authentic ecotourism.

3. Methods

3.1 Study area

The northern province was selected as the study area which consists of five districts namely Jaffna, Mullaitivu, Killinochchi, Vavuniya, and Mannar (Figure 1.). The northern province is the third-largest province of nine provinces in Sri Lanka and the size is about 8,884 km^2 in an extent that accounts for about 13.22% of the total land area in Sri Lanka (ISEA, 2014; Nadanasabesan, 2015). It is surrounded by the Gulf of Mannar and the Palk Bay to the west, the Bay of Bengal to the north and east, and northcentral and northwestern provinces to the south (Normann et al., 2003). The northern province is located in a law land dry zone, that is characterized by dry climatic conditions (Nadanasabesan, 2015). The province is covered by tropical dry mixed evergreen forests of 1,980 km^2, with numerous rivers flowing through them (ISEA, 2014). It is estimated that 49% of the land is covered by the dense forest (ISEA, 2014). The annual rainfall is usually less than 1,250 mm from the northeast monsoon from November to February and very less from the southwest monsoon from May to August (Wijialudchumi, 2014; Nadanasabesan, 2015). The climate is typically tropical with the average temperature varying between 28 °C to 32 °C and relative humidity changing from 70% during the day to 91% at night (DCS, 2020). The population of the northern province is 1.253 million by December 2019 (DCS, 2020), with the majority being Sri Lankan Tamil (93.86%), and minority Sri Lankan Moor (3.06%) and Sinhalese (3.05%) population (Nadanasabesan, 2015).

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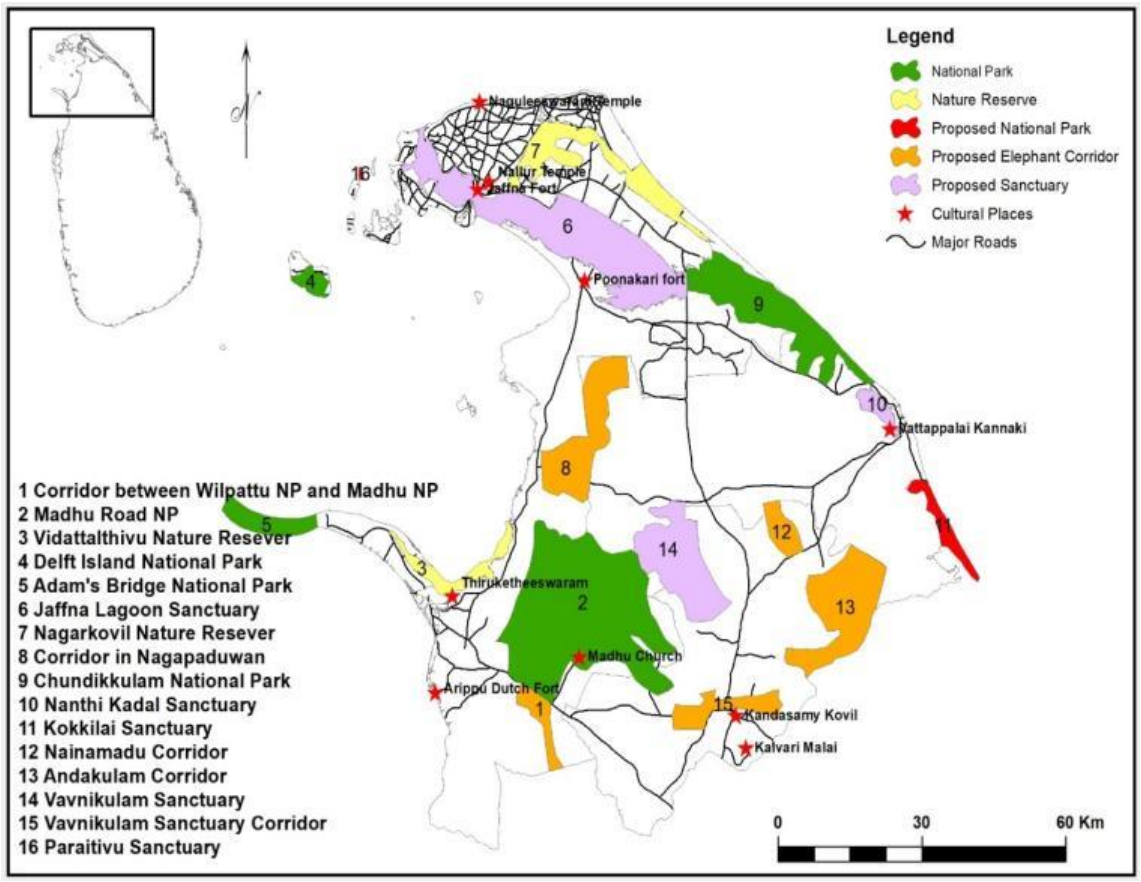

Figure 1. *The map of the study area shows all the existing and proposed wildlife areas and prominent cultural places within the northern province (Adopted from ISEA (2014) and Wijesundara et al. (2017).*

3.2 Data Collection

Both quantitative and qualitative methods were employed to collect the data. The primary data were collected from the respondents using an online questionnaire and the collected data were fed into the Microsoft Excel sheet and data were analyzed using the same software. The questionnaires that are consisting of 15 questions were sent through emails to the respondent and the data collection was done for one year from January to December 2020. The respondents belong to different sectors such as international and domestic ecotourists, hotel owners, employees, university students, researchers, and naturalists that have engaged in the ecotourism field. The secondary data were gathered from the sources including books, journals, newspapers, reports, and agreements to analyze and find the available resources in the province. Moreover, data from Grama Niladari and the Divisional Secretariats were also gathered for the present study. In addition, the field data were gathered by occasionally visiting to the area in all districts in the northern province. This data includes places of religious importance, protected areas, archeological sites, information on cultural activities, livelihood activities of people, and prominent places that have ecotourism potential.

GPS coordinates were collected using a standard GPS receiver (Garmin eTrex Venture HC Handheld GPS receiver). Descriptive statistics and strengths, weaknesses, opportunities, and threats (SWOT) analysis (Perera, 2011) were used to analyze the data.

4. Results and Discussion

There were 152 respondents who successfully answered the online questionnaires. Among them, the majority (99%) answered as ecotourism is a tool for regional development and can bring benefits (97%) to the northern province (Figure 2). However, the majority (66%) knew and replied that ecotourism is still not well-developed in the northern province. And respondents' awareness of ecotourism potential in the northern province is also high (72%) (Figure 2.). Moreover, they further replied that there is a high potential of environmental and cultural resources available for ecotourism in the province (Figure 3). However, community participation was not seemed to be favorable for ecotourism activities in the province as the majority answered they are in Very poor (14%), Poor (49%), and Average (34%) level (Figure 4). Moreover, the institutional participation, promotions, transport facilities, and accommodation available for ecotourists in the province are mostly average and poor level (Figure 4). Nevertheless, the majority (Extremely High-34%, High-40%), replied there is a high ecotourism potential in the northern province (Figure 5). According to the analysis of secondary data from occasional field visits and numerous resources within the area, the opportunities and challenges within that specific location have been categorized as ecotourism activities.

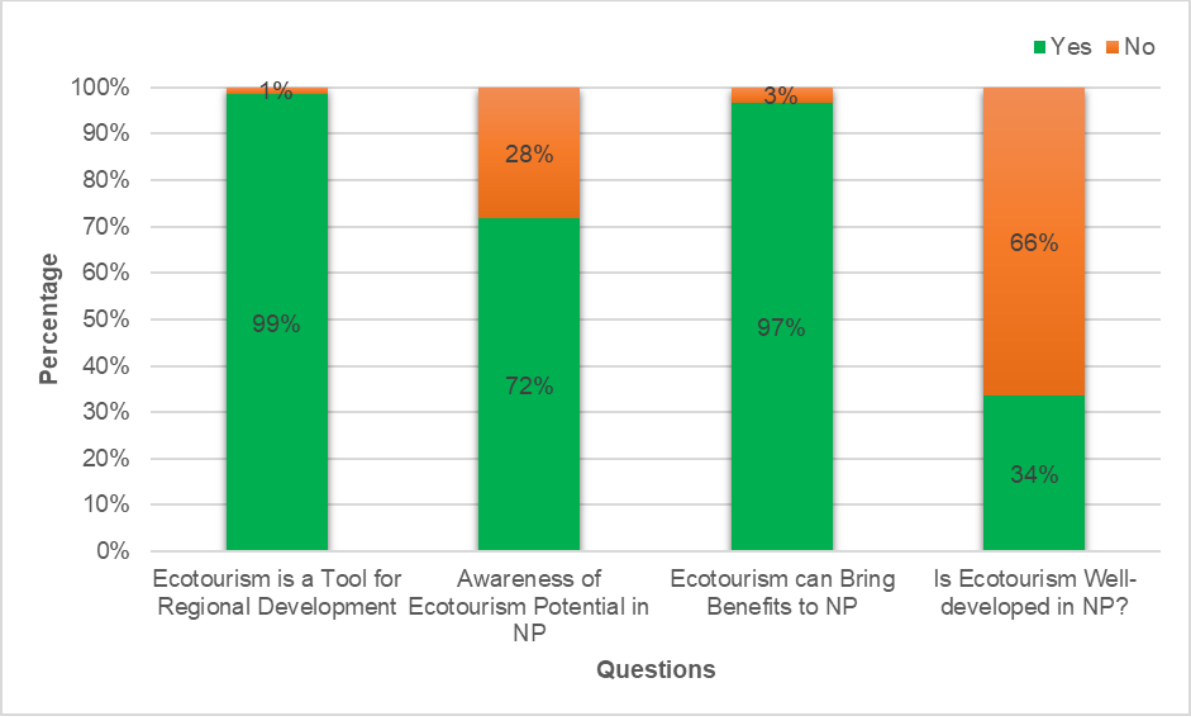

Figure 2. *Responses for the common questions among the respondents*

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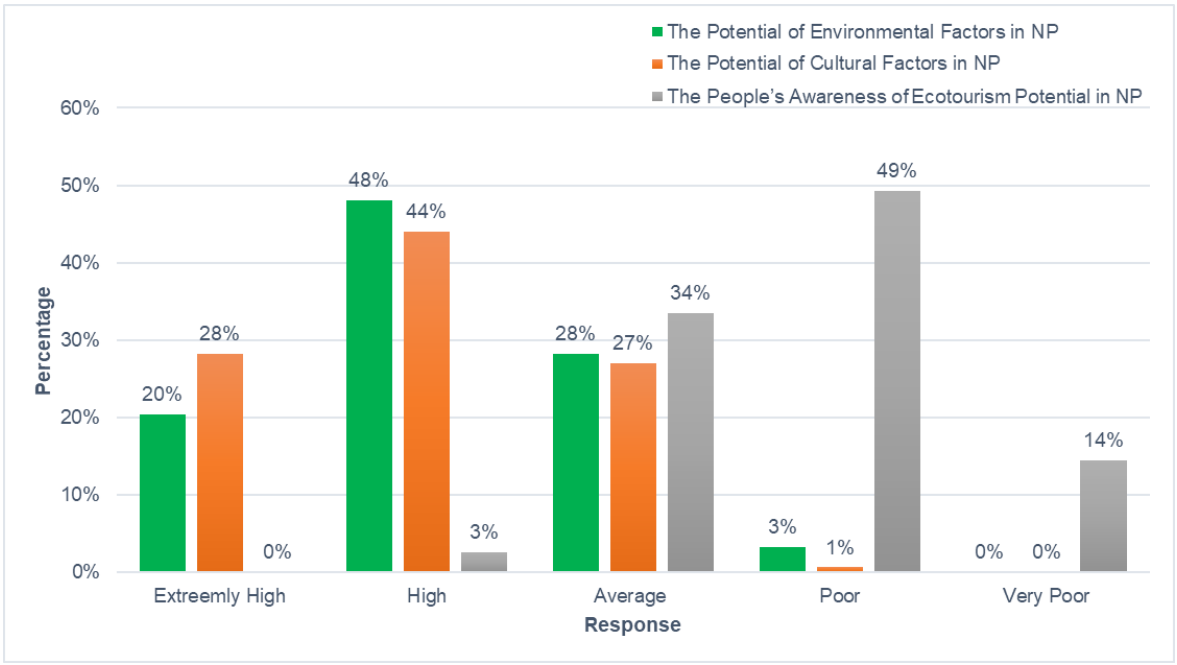

Figure 3. *Potential of Environmental and Cultural Factors in the northern province*

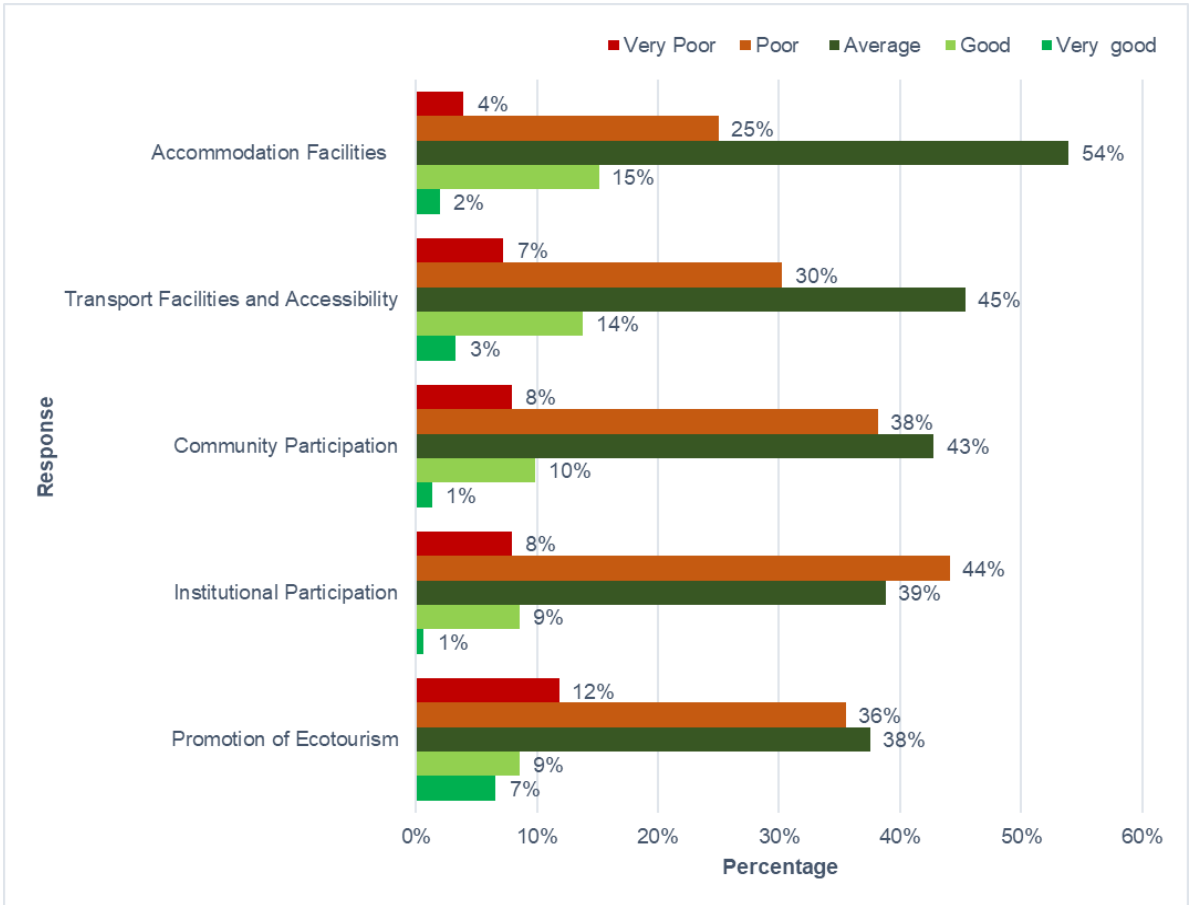

Figure 4. *The resources availability, community and institutional participation, and promotion of ecotourism within the northern province*

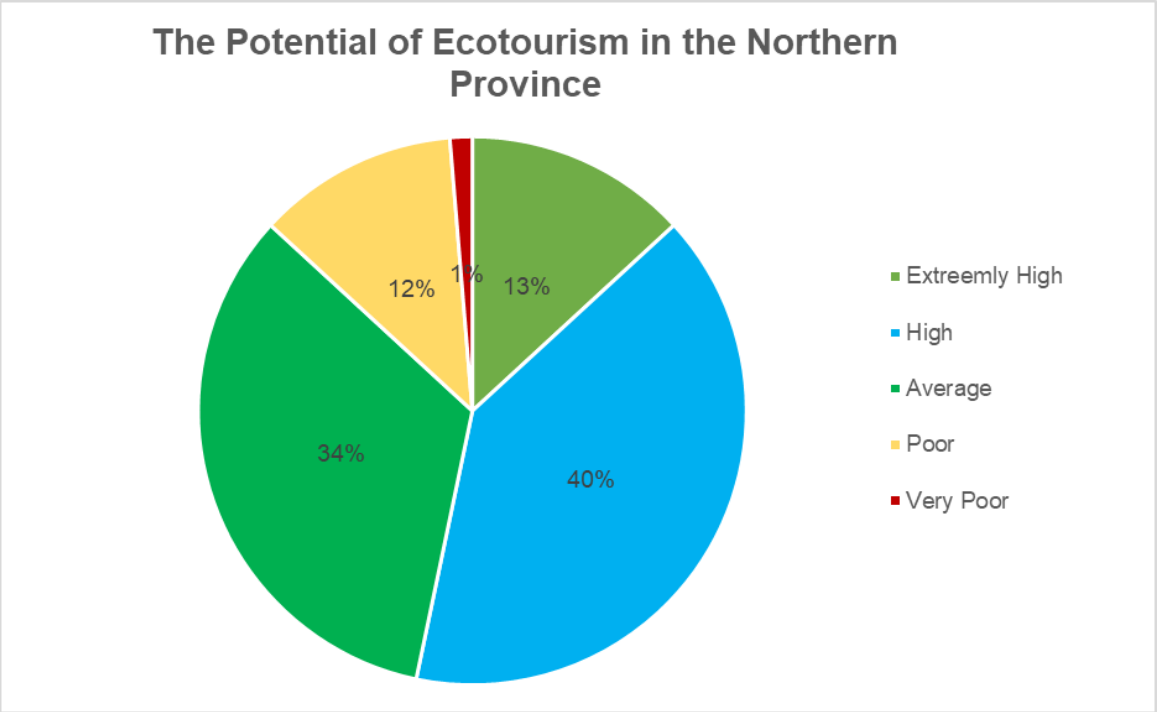

Figure 5. *The Ecotourism Potential in the northern province*

4.1 Jaffna District

The Jaffna district is about 1,025 km^2 large including land covered by inland water. The total forested area cover is about 12,870 ha, and 5,547 ha are protected as protected areas (ISEA, 2014). Jaffna has been identified as a widespread tourist destination after 2009 with the end of ethnic war especially there has been a large number of domestic tourists (Hamzayini & Arachchi, 2020).

4.1.1 Nallur Temple

The Nallur Festival is devoted in honor of the Hindu War God Skanda thus thousands of tourists visit Jaffna to witness the event during July and August (Figure 6) (Samarathunga, 2016). Nallur is an icon, a symbol of Jaffnas' Hindu culture, and hundreds to thousands of pilgrims both from Sri Lanka and abroad annually visit the place (Samarathunga, 2019). Nevertheless, there are several challenges that exist within the place including lack of accommodation, water, parking facilities, restaurant and other shopping available to visitors (Samarathunga, 2019), during the festival season, it becomes too crowded thus ecotourists are not fond of visiting such places. Jaffna and northern province are blessed with numerous handicrafts which are utilized for both domestic and commercial purposes.

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4.1.2 Jaffna fort

The Jaffna Fort and the buildings have been constructed by the Dutch during the colonial period of Sri Lanka including the Portuguese, and the British contributed to upgrade it (Department of Archeology, 2021). This is the second-largest Dutch fort in Sri Lanka which is a prominent archeological monument. The fort had been heavily destroyed during the wartime thus still the major portion remains to explore for the visitors. The most prominent feature is this square shape building which is named "Queens Place" (Figure 7) (Department of Archeology, 2021). Hence, this is a prominent place in the Jaffna peninsula that provides opportunities for ecotourists to explore its archeological values.

Figure 6. *Nallur Temple in Jaffna*

Figure 7. *Jaffna Fort Monument (The Queens' Place)*

4.1.3 Naguleeswaram Temple

Naguleswaram temple is a venerated centuries-old historical Hindu temple in the northern capital of Jaffna (Figure 8.) (Ceylon Expeditions, 2021). It is also known as the Kovil of Keermalai Jaffna that is one of the oldest Hindu shrines in the northern province of Sri Lanka. This temple is located close to the Keerimlai hot spring (Ceylon Expeditions, 2021).

Figure 8. *Naguleeswaram Temple*

4.1.4 Delft Island National Park

Delft Island National Park is a recently declared national park of the protected area network in Sri Lanka (Aloysius et al., 2021). The island is the largest island in the Jaffna peninsula and is located 10 km away from the mainland (Selvarajah & Sujeevan, 2020; Goonathilaka, 2013). This national park has a very unique habit of very rare and endangered resident and migrant bird species (Nitharsan, 2018). Moreover, some species (Indian Courser) which are extremely difficult to see in other parts of Sri Lanka can easily observe here thus the resident population of them has been recorded (Aloysius et al., 2021). Therefore, it is ideal for people who are keen on bird watching. Further, the island also supports an introduced feral horse population that is unable to see anywhere in Sri Lanka, thus these provide unique opportunities for ecotourists (Figure 9) (Aloysius et al., 2021). A giant Baobab tree is located on delft island that forms ecotourism attraction to the island (Figure 10). However, reaching the island is quite difficult because everyone has to engage in a few hours of difficult and uncomfortable ferry journey to the island.

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Moreover, within the island, the transport facilities are not readily available for visitors and traveling becomes tedious (Nitharsan, 2018). Further, only a few accommodations are provided within the island for only a limited number. Facilities for animal observation are also fewer on the island hence all these hinder the availability of unique opportunities for ecotourists.

Figure 9. *Delft Island National Park*

Figure 10. *Baobab Tree in Delft Island*

4.1.5 Proposed Priaitivu National Park

This is an existing sanctuary that is proposed to upgrade into a national park due to its significance in providing a feeding and breeding ground for waterbirds (ISEA, 2014). At the moment there are no proper transportation and accommodation facilities available to the place.

4.1.6 Nagarkovil Nature Reserve and Jaffna Lagoon Sanctuary

The entire Jaffna lagoon has been proposed to declare a sanctuary and nature reserve due to its significance in providing important habitats for many migrants and resident waterbird species (Figure 11) (Wijesundara et al., 2017). The sanctuary includes the areas Sarasalai, Anthanathidal, Vallai, and Thodaimanaru that provide significant refuge for bird species such as Greater Flamingo, Glossy Ibis, and Common Coot (Wijesundara et al., 2017). The Nagarkovil has included significant mangrove areas in the Jaffna Peninsula. These also are favorable habitats for waterbird species including the annual influx of migrants from August to April. All these habitats provide unique experiences for ecotourists who are keen to visit the area.

4.1.7 Chundikkulam National Park

This is also a very recently declared national park between Jaffna and Mullaitivu districts. It is a very good refuge for thousands of waterbirds including the annual influx of migrants. The area is about 196 km^2 that became a national park in 2015 (DWC, 2016). Chundikkulam Lagoon is also rich with mangrove swamps and seagrass beds. The surrounding area mostly consists of Palmyra palm, scrub forests and dry zone plant species (Michael, 1990). There are some records of sloth bears, leopards, and deer species in the park (Gunawardena, 2015). Moreover, Saltwater Crocodiles and Mugger Crocodiles are also easy to spot in the lagoon (Santiapillai & Wijeyamohan, 2004). Hence, there are numerous opportunities for ecotourists, particularly for birders.

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Figure 11. *Sunset in Jaffna Lagoon*

Figure 12. *Traditional Walls Unique to the Jaffna Peninsula (a: Palmyra Leaf Wall in Jaffna; b: Coral Stone Wall in Delft Island)*

There are some unique types of fences that cannot be seen in other parts of Sri Lanka in the Jaffna Peninsula (Figure 12).

4.2 Mullativu District

The Mullaitivu district is the biggest district in terms of size in the northern province that is about 2,617 km^2 large and has around 167,850 ha of forest cover within the district (ISEA, 2014), and 178,386 ha of them are protected as protected areas. These forests provide a unique opportunity for ecotourists to observe Asian elephants, deer,

and birds. Less popularity and lack of transportation are the major problems that exist within the area.

4.2.1 Vattappalai Kannaki Amman Kovil

Vattpalal Kannaki Amman temple is one of the most significant and respected sacred places of the Hindus (Figure 13). People from Sri Lanka and abroad visit the place for the festival which is held in May. This temple is located in the Mullaitivu district that is dedicated to Goddess Kannakki Amma. Vattapalai Amman is believed to be a deity of myths, mysteries and miracles.

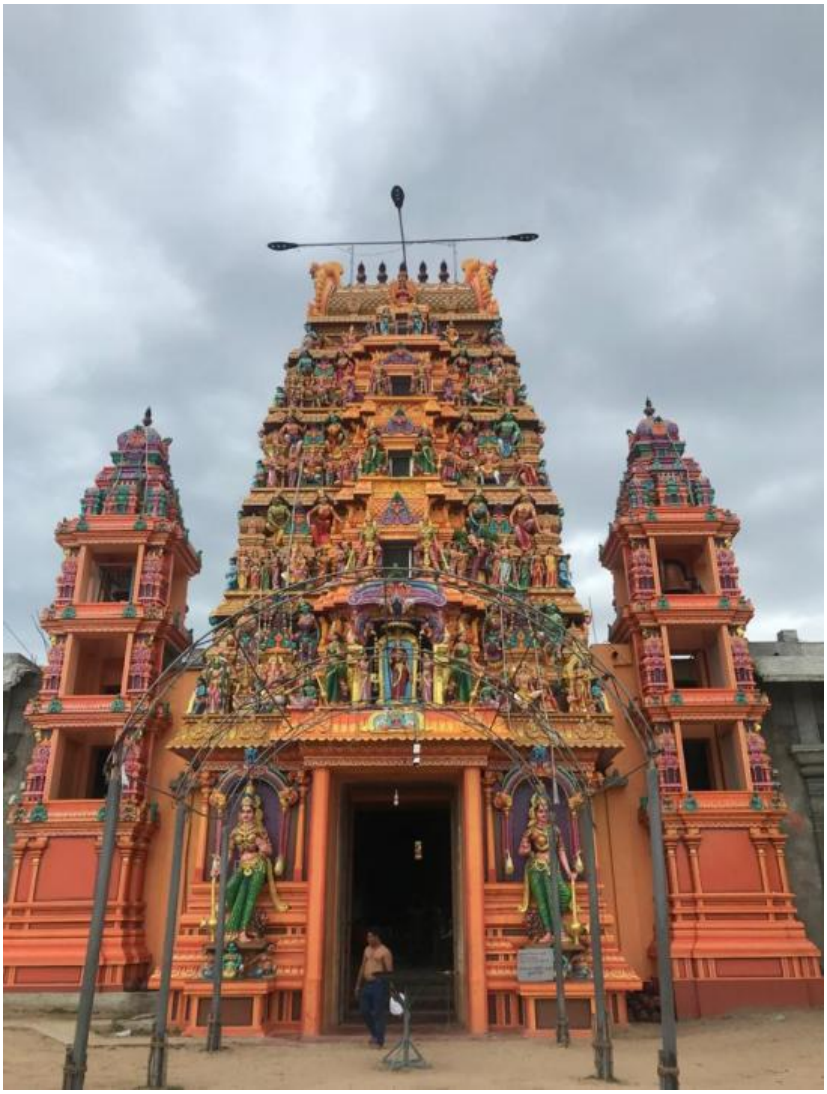

Figure 13. *Vattappalai Kannaki Amman Kovil*

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4.2.2Nanthi Kadal Sanctuary

This is another wetland that provides refuges to migrants and resident waterbirds in Sri Lanka. Hence, bird-watching activities are available to conduct within the area.

4.2.3 Kokkilai Sanctuary

Kokkilai Lagoon including its surrounding area was declared as a bird sanctuary on 18 May 1951 under the Fauna and Flora Protection Ordinance (No. 2) of 1937 (Michael, 1990; DWC, 2015). Presently it has an area of about 20 km^2 which also supports waterbird species. It is also rich with mangroves, salt marshes and surrounded by scrubs, cultivation, and open forests (Michael, 1990).

4.2.4 Nagapaduwan Corridor

This is also a proposed elephant corridor to support the free movement of elephants within the area. Therefore, there is a potential to see Asian elephants within this area (ISEA, 2014). In addition to the above protected areas in Mullativu district, there are many conservation forests that are governed by the Forest Department of Sri Lanka including Iranamadu Forest Reserve, Vadakkachchi Forest Reserve, Panikkankulam Forest Reserve, Vannivilankulam Forest Reserve, Teravil Oddusudan Forest Rreserve, Chamalkulam Forest Reserve, Tanduvan Forest Reserve, Kulamurippu "A" Forest Reserve, Kulamurippu "B" Forest Reserve, Nagancholai Forest Reserve, and Andankulam Forest Reserve (ISEA, 2014). Mullathivu is also famous for traditional fishing activities that form attractions in the area (Figure 14).

Figure 14. *Traditional Fishing in Mullathivu*

4.3 Mannar District

The Mannar district has around 2,002 km^2 land area including the land covered by water. Mannar district consists of 131,946 ha of forested areas and 125,288 ha are protected as PAs'.

4.3.1 Arippu Dutch Fort

This is located about 20 km south of the Mannar Fort from Mannar Island. This is a relatively small square-shaped bastion fort that was built by the Portuguese (Figure 15.). The fort is also interconnected to legends such as this is believed queen of Mannar where her fortress is located. However, reaching the place is a little bit difficult thus there is no proper transportation system. Moreover, the place is very little popular among the visitors. There are no proper interpretation signs within the place that where visitors can get information's.

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Figure 15. *Arippu Dutch Fort in Mannar*

4.3.2 Thiruketheeswaram Kovil

Thiruketheeswaram Kovil is an ancient Hindu kovil located in the Mannar district of Sri Lanka (Love Sri Lanka, 2021). The temple is dedicated to the Hindu supreme being Ishawara in the form of the god Shiva. It is believed to be one of the oldest thus the details on the exact construction period are unknown (Love Sri Lanka, 2021).

4.3.3 Elephant corridor between Wilpattu NP and Madu NP

This was proposed to support the elephant migration from Wilpattu National Park and Madu Road National Park (ISEA, 2014). These are good for Asian elephant-watching activities.

4.3.4 Vidattalthivu Nature Reserve

Vedittalthivu Nature reserve is a recently declared nature reserve from the sanctuary and it is important for feeding ground and roosting of migratory and resident waterbirds. Moreover, mangrove forests provide extra opportunities for visitors to experience the mangrove habitat.

4.3.5 Adam's Bridge National Park

This is also a recently declared marine national park which is about 190 km^2 in extent. This is a very significant point thus most migratory birds follow the Pamban Island - Adam's Bridge- Mannar Island route when flying to Sri Lanka during the migratory period and the extensive sand dunes of Adam's Bridge are also used by several bird species as their breeding grounds.

4.3.6 Madu National Park and Madu Church

The Madu Road National Park is located in the Mannar district that was recently upgraded to a national park from the sanctuary which is about 631 km^2. The national park is home to thousands of animals including birds, Asian elephants, leopards, deer, etc. The Madu Church is located within the Madu National Park that is one of the most Reverend Churches in Sri Lanka (Figure 16). It is about 500-year-old Church (Amazing Lanka, 2021). The annual Madu Church festival is famous among domestic tourists and they regularly take part in the festival. In addition to the above-protected areas governed by the DWC in the Mannar district, there are three main forest reserves that are governed by the Forest Department including Neenthavil Forest Reserve, Mavillu Forest Reserve, and Veppal Forest Reserve (ISEA, 2014).

Figure 16. *Madu Church in Mannar*

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4.4 KIlinochchi District

Killinochchi district is much bigger than the Jaffna district that has about 1,236 km^2 land area and has 35,110 ha of forested land (ISEA, 2014).

4.4.1 Poonakari Fort

This famous Pooneryn Fort was constructed by the Portuguese in Poonakari area in 1770 to protect their possessions in Jaffna (Valvettithurai.org, 2015). Presently the only ruins of the fort remain that provide opportunity for visitors to see the place (Figure 17). Other than that, there are conservation forests that are governed by the Forest Department including Pallai Forest Reserve, Vadakkachchi Forest Reserve (Theravil), Iranamadu Forest Reserve, Kilinochchi Forest Reserve, Akkiriyan Forest Reserve, Chunnavil Forest Reserve, Mandakalar Forest Reserve, Nagapaduvan Forest reserve (ISEA, 2014).

Figure 17. *Poonakari Fort in Killinochchi District*

4.5 Vauniya Distict

The Vavuniya district is the second-largest district in the northern province has about 1,967 km^2 land area and 88,801 ha of forested area (ISEA, 2014).

4.5.1Kandasamy Kovil

Kadasamy Kovil is located in the heart of the Vavuniya district and was constructed for dedication to Lord Murugan, the Tamil God of War and victory (Figure 18) (Discover Sri Lanka, 2021). Many devotees visit the Kovil for annual religious festivals, and on Fridays for poosai.

4.5.2 Kalvari Malai

The Kalavari of Vavuniya is a famous shrine for the Northern Christians especially during the Lent season pilgrims from all over the country climb to the hill to perform their rituals (All Ceylon, 2021). There is fifteen life-size statue which expresses the crucifixion of Jesus Christ.

Figure 18. *Kandasamy Kovil in Vauniya*

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4.5.3 The Corridor between Nainamadu Forest Reserve and Chamalankulam Forest Reserve

This is another corridor which is proposed to support the elephant movement and reduce the human-elephant conflict.

4.5.4 Andakulam Corridor

Important elephant moving area that is proposed to upgrade it into an elephant corridor. Hence having the opportunity to see the Asian elephants. In addition to the above PA's, there are several conservation forests that are governed by the Forest Department including Chamalkulam Forest Reserve, Vannivilankulam Forest Reserve, Paranthan Forest Reserve, Nainamadu Forest Reserve, Irampaikulam Forest reserve, Melkulam Forest Reserve, Mamadu Forest Reserve, Maha Irampakulam Forest Reserve, Puvarasankulam Forest Reserve, Irasenthirankulam Forest Reserve, Tonigala Forest Reserve, and Kurunkalikulam Forest Reserve (ISEA, 2014).

The coastal and marine environment in the northern province consists of a large part of the coastal ecosystems including mangroves, coral reefs, seagrass beds, brackish water lagoons, salt marshes, lagoons, inland water bodies, and streams (ISEA, 2014). Moreover, the majority of the coral reefs in Sri Lanka are located in the Gulf of Mannar and along the east coast up to the Batticaloa district (ISEA, 2014). Most of these coral reefs are located around islands of the Jaffna Peninsula. Moreover, extensive mangroves are found in Jaffna, Killinichchi, Mullaitivu, and Mannar. Seaweeds in the Mannar coast and Kilinochchi provide homes for thousands of species including rare and endangered Dugong, Dolphins, etc. Activities such as whale watching, sea turtles, and dolphins are also available and feasible within the area. However, very little data are available about these ecosystems because studies are limited due to the last three decades. Therefore, all these ecosystems provide novel and unique opportunities for the ecotourists that may not be available in other parts of Sri Lanka. There is a scarcity of information regarding exact forest types, forest cover, and biodiversity of the northern province. However, compared to the other provinces, there is a large extent of forests in the northern province that is represented by the largest forest cover in Sri Lanka (ISEA, 2014), and shows remarkable biodiversity and ecologically significant status in the country. According to the results of the questionnaire survey, the majority of people answered there is a high potential and opportunities for ecotourism activities within the northern province. However, several barriers exist to implementing the ecotourism activities such as infrastructure, lack of institutional and community participation, transportation, less popularity of the places, and lack of awareness. Most respondents have suggested that community awareness and education play a vital role in ecotourism development hence necessary awareness programs should be conducted. Therefore, it is clear that ecotourism is the least developed within the province. According to the secondary data and occasional visits to the places, it is recorded the northern province has numerous resources for ecotourism including wildlife areas, forest reserves, cultural places, traditional dancing, and foods, etc. (Figure 19 and Figure 20). All these resources are

most suitable for ecotourism and provide the most unique experience for the visitors. Moreover, implementing ecotourism programs is advisable and it promotes sustainable development in the post-war developing scenario. Government plays a pivotal role in developing the regions, especially the war-affected areas such as the northern province (Samarathunga et al., 2020). Further, three decades of isolation from other areas of Sri Lanka has allowed preserving the cultural identity in the northern province thus sudden development can negatively affect the culture and biodiversity. Hence, promoting ecotourism will be beneficial to protect both biodiversity and the cultural identity of the northern province that had been preserved for a long time. The following opportunities and challenges were commonly found in the northern province.

Figure 19. *Traditional Dancing Unique to the Jaffna Peninsula*

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Figure 20. *Some Unique Foods in the Northern Province of Sri Lanka (a; Pili Kanchi; b: Traditional Rice and Curry; c: Pittu with Seafood; d: Point Pedro Wadai)*

4.6 Opportunities

- Items made out of Palmyra trees, especially with their leaves have remarkable demand and take a high place in the life of Jaffna people (Samarathunga, 2016; Samarathunga, 2019).
- Jaffna dance and music have the ability to give a unique experience to those who visit the place especially ecotourists. Further, traditional foods that are unique to Jaffna also make attractions for ecotourists (Samarathunga, 2016).
- Many National Parks, Nature Reserves and Sanctuaries in northern Sri Lanka namely Chundikkulam National Park, Delft National Park, Adam's Bridge National Park, Madu Road National Park, Jaffna lagoon Sanctuary, Kokkilai Sanctuary, and Vedittalthivu Nature Reserve that form thousands of opportunities.
- Religious and spiritual importance places (Nallur Temple, Naguleswaram Temple, Thiruketheeswaram Kovil, Vattappalai Kannaki Amman Kovil, and Madu Church).
- Cultural places that have ancient historical values and significant historical evidence (Nilavarai well, Caniliyan mantirimanai, keerimalai hot springs, light houses).
- Major forts that explain the significant relationship with the European countries like Portugal, Netherlands and England (Jaffna fort, Mannar fort, Arippu fort, and Poonakari fort).
- Beautiful landscape locations (Jaffna lagoons, Mangrove forests, Sunset, Paddy plantations, Tanks, Wetland areas, and Malvathu River stream).

- Traditional houses in the village areas.
- Traditional activities (Food, Dance, and Festivals).
- Traditional fences (Coral stones fence in Delft, Coconut tree leave fence in Mullaitivu, and Palmyra leave fence).
- Attractive places (Sangupiddy bridge, Kunchukulum Suspension Bridge).
- Beautiful beaches (Casuarina Beach, Chaddy Beach, Kankesanthurai Beach, Mullaitivu Beach, Talaimannar Beach).
- Unique trees (Baobab tree in Delft and Mannar).
- The entire Jaffna lagoon has been proposed to declare as a sanctuary and nature reserve due to its significance in providing important habitats for many migrant and resident waterbird species.
- Northern Province is one of the main terminals that entry and exit points for almost all the migratory birds that use the Central Asian Flyway including Jaffna Peninsula and Mannar.
- There are a few northern restricted bird species in northern Sri Lanka (Grey Francolin (*Francolinus pondicerianus*), Indian Courser (*Cursorius coromandelicus*), Eurasian Collard Dove (*Streptopelia decaocto*), Black Kite (*Milvus migrans*), Lesser Golden-Backed Woodpecker (*Dinopium benghalense*), and Black Drongo (*Dicrurus macrocercus*).

4.7 Challenges

- No proper boundary for protected areas (Delft National Park, and Chundikulam National Park) (Aloysius et al., 2021).
- Lack of studies in the field of ecotourism, and biodiversity conservation.
- Transport felicities are very poor in some places (Reaching the Delft Island is quite difficult and everyone has to engage in a few hours of difficult and uncomfortable ferry journey to the island, it is very hard traveling to Chundikulam National Park).
- Historical places are in dilapidated condition without proper preservation (Arippu fort, Jaffna fort, Mannar fort, and Caniliyan mantirimanai).
- Threats imposed by the people on the wildlife especially to the migrant birds.
- Polythene and plastic wastes in ecotourist locations by the visitors and local people (Sarasalai proposed mangrove forest reserve, Jaffna lagoon sanctuary, and Madu Road National Park).
- There is a lack of interconnection between other provinces, ecotourist locations, and northern province locations (Example: Colombo to Jaffna is about 362 Km).
- Community participation is very poor.
- There is a lack of naturalists (intruders) or ecotourism-based professionals in the northern province compare with other provinces.
- Institutional participation is also very poor.
- Lack of promotion (Most the ecotourists don't know some ecotourist destinations in northern Sri Lanka).
- There is a lack of marketing opportunities for the local people even though there are a few unique products in the north.

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- Overexploitation and destruction of the natural resources by the internal and external sources.
- Although four districts in the northern province have the beach resources, the marine-based tourism activities are very poor namely whale watching, dolphin watching, boat ride, water sports, and mangrove forest walk.

Human-wildlife conflicts (Human-elephant conflicts in Poonakari in Kilinochchi and Madu Road National Park in Mannar district).

5. Conclusion

The northern province consists of unique national and human resources that provide novel opportunities for ecotourists and are suitable for ecotourism development. However, the northern province did not function at the expected level due to several challenges. The northern province had been isolated and less explored for the last 30-40 years due to armed conflict that was prevailing in the country. Hence, the situation was not favorable for the development of tourism in the country particularly in the northern province. The province rather became an emerging destination with the ending of the difficult time after 2009. Despite its unique opportunities and available resources for tourism and ecotourism, it was not developed up to a considerable level. The major reasons for this were the fear of the past experiences, less infrastructure development, lack of proper planning, community participation, and little promotion of the province for tourism. Therefore, these barriers will hinder the availability of opportunities for ecotourists. Hence, sound infrastructure development, and ecotourism development planning with the participation of all the stakeholders including the community are necessary to overcome those barriers and develop the northern province as one of the best ecotourism destinations in the post-war development of Sri Lanka.\

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