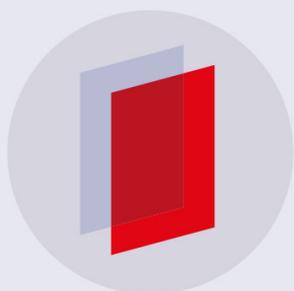


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The Potential of Nature Tourism at Muar and Tangkak Districts, Johor, Malaysia.

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Abstract. This research is to integrate the focused economy into a more non-consumptive alternative; considering that a sustainable nature tourism could contribute to conservation of biodiversity. The objective of the study is to identify status and nature of existing tourism sites and products within Muar and Tangkak districts, in Johor. At the same time researchers pinpoint potential nature tourism products and suggest their development adding values to existing tourism activities. The final touch to this venture is creation of souvenir prototypes that portrays local image. Data were collected by site visits, scan observation and field sampling. Among chosen destinations were Gunung Ledang Johor National Park, C&C Mushroom Cultivation Farm Sdn. Bhd., Tangkak; Nasuha Herbs & Spice Farm and Tanjung Ketapang and Tanjung Emas Parks, Muar. Existing tourism products were oyster mushroom and herbal tea. From this research potential products proposed are stingless bee (*Trigona* group) and sandalwood (*Aquilaria malaccensis*), bunga tanjung (*Mimusops elengi*) and bird watching respectively. These new products were tested against eight criteria currently used for development of nature tourism product and they met six: morphological attractiveness, behavioural enticement, linkage to local culture, ecologically important to people, reliability of sightings and safety. Based on aspects such as time, cost and risk, data acquired were analyzed and used in formulating a tentative tourism package. Formulated tourism packages would need testing in the near future before released to be promoted into the market. From this research several other attractions and potential products were identified and discussed in this paper.

1. Introduction

For now, serious efforts to develop nature tourism products in the state of Johor is lacking. Currently there is no special promotion to effectively lift nature as a product of tourism, here. This study attempts to highlight the potential of nature tourism products to be identified at Muar and Tangkak districts. The Johor Tourism Master Plan 2014-2023 has aimed at increasing tourist arrivals as well as increase in tourist spending; especially for nature tourism [1]. Thus, a new approach is needed to promote and enhance this nature-based tourism industry. Bandar Maharani Bandar DiRaja, is the official name for Bandar Muar in the district of Muar, Johor, Malaysia. The Maharani City Declaration as the Royal City of Johor was officiated by the Sultan of Johor, Sultan Ibrahim ibn Almarhum Sultan Iskandar on 10th. Muharram 1434 Hijrah equivalent to 24th. November 2012 [2]. It has a population of 110,000 and



founded around 1884, named after the wife of Sultan Abu Bakar Daeng Ibrahim, the Maharani. Recognition through the ASEAN Clean Tourism City Award (ACTCA) was given in Chiang Mai, Thailand [3]. This was an exciting beginning for Muar to be a sustainable city of the future. Among the initiatives taken to renew the image of Muar is to repair and repaint old buildings. The classic buildings are symbol of a civilization town that began in 1887 [2].

There were 22 old and new tourism products identified in the Tangkak District Local Plan 2016-2020 and the findings aimed at the tourism sector as the main sector that would drive the region's economy [4]. Examples are the paddy cultivation at Sawah Ring, a mushroom company, giant prawn fishing at Sungai Muar, vegetable crops throughout the Tangkak district, various cultures, and textiles and clothing centers in Tangkak town [4].

The concept of nature tourism can be referred to the management, planning and design of natural areas with high naturalness or scenic resources [5,6]. Nature tourism that is preoccupied with sustainable tourism development has great concern for the protection of landscape quality of the non-renewable natural resources, historical and cultural values. In the planning this is usually drafted to become law, policy or act, meanwhile, the design explains the approach, technique or method used to develop an area for sustainable development [5,6]. Muar and Tangkak are historically important and culturally unique. With picturesque landscapes these two towns presently, do have some small-scale uncoordinated tourism activities. At the unique and mystical tourism icon Gunung Ledang Johor National Park, there is a Resort called Gunong Ledang Resort. No tourism package is currently available. Visitors or tourist were left on their own to fill up the time immersed in the pristine nature of the mountain. Further down the road an oyster mushroom farm publicise rather in small ways, an agrotourism experience. Participating personally, there was not much gained during the visit. Two parks in Muar, the Tanjung Emas and Tanjung Ketapang have superb views, laden with history but remained as a casual walkway and joggers' lane. The beautiful Sungai Muar, lined in parts with mangrove, and parts with majestic buildings only cater for a simple river cruise activity. Much more could be done.

In line with the present aspiration of the state and federal government of Malaysia to enhance nature tourism [1], this research hopes to integrate the focused economy of tourism into more non-consumptive alternative of the future, nature tourism. Sustainability of nature tourism could facilitate and help conservation of nature. The significance of nature tourism aids in slowing down the rate of natural resources degradation out of the need for utilization through development. Thus, objectives of this research are to (i) identify existing tourism sites and products within Muar dan Tangkak, (ii) identify potential nature tourism products for each chosen nature tourism site and (iii) formulate a tourism package linking up Muar and Tangkak aligned to nature tourism activities. The final touch of this effort is the creation of tourism products prototypes that portray the local image, gelling memories of a good nature tourism in Johor, Malaysia.

2. Materials and Method

A road map connecting the two towns is given in Figure 1 and the four destination marked 1 to 4. At each of the four sites researchers spend time observing, talking to local people and sampling. At Gunung Ledang Johor National Park, observations were made, firstly, for the stingless bee of the *Trigona* group from the family Apidae, order Hymenoptera. The reasons choosing stingless bee were because it is safe, harmless, and of current interest to Malaysians. Secondly, observation was focussed on the sandalwood (*Aquilaria malaccensis*). As we all know, value for a kilogram of resin from sandalwood could reach RM4,300 to RM5,800 [7].

At the next destination C&C Mushroom Cultivation Farm Sdn. Bhd., researchers participated the existing agrotourism package and noted activities carried out. C&C Mushroom Cultivation Farm Sdn. Bhd. is one of the companies involved in mushroom industry. It was established by the founder, Mr. Chew Swee King since 1987. He was interested to develop this industry because he believes that the oyster mushroom can be a strong substitute to vegetables and meat as it is rich in nutrition, grown organically and edible. At the early stage it was only a small farm growing edible fresh mushroom but now, it has become the largest mushroom farm in Malaysia. With the initiative, dedication and

determination of the founder, this company has become the biggest grower, producer and supplier of fresh edible and nutritious grey oyster mushrooms (NAMA SAINTIFIK) in Malaysia and Singapore with production exceeding 150 metric tons per month since 2006 [8].

Further south is the third destination, the largest herbal farm in South East Asia, Nasuha Herbs and Spice Farm. Similarly, researcher participated in the existing tourism package to tour around the farm, which had some 133 different species of herb and spice plants [9].

The fourth destination are the two riverside parks in Muar: Tanjung Emas and Tanjung Ketapang. Presently they are recreational parks where casual activities are carried out; such as joggings, cycling and picnics. A Muar River cruise is being run from Tanjung Emas and visitors pay RM12 per person for a return trip. A 45-minutes to one-hour Muar River Cruise departs from the park, offering tourists a tour of Muar town from the river. Next to Tanjung Emas is Tanjung Ketapang, facing the international shipping lane of the Malacca Straits. The stretch of mangrove along the promontory's coast is home to crab eating wild macaques (*Macaca fascicularis*) [10].

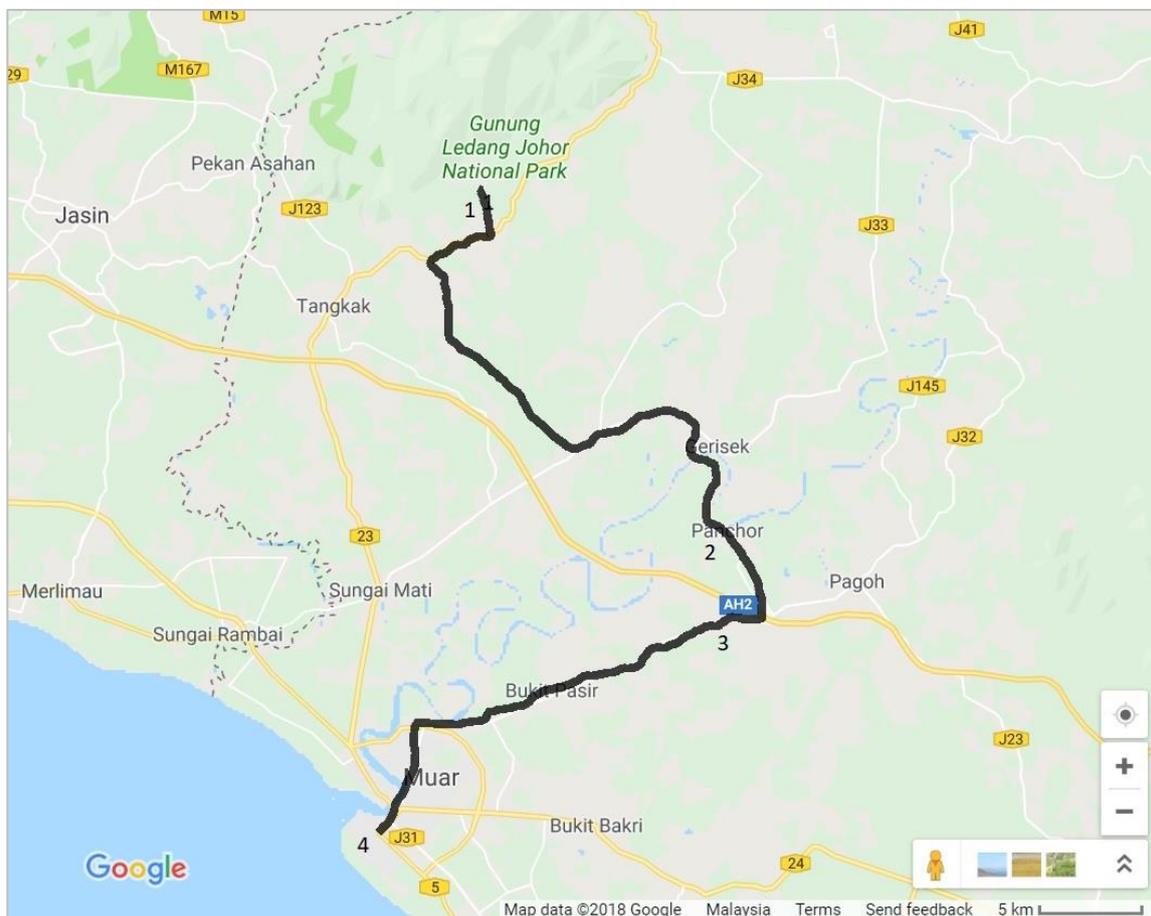


Figure 1. Road map connecting the four destinations (Source: Google Maps)

During the visit, potential new products were identified and sampled. Insect samplings especially for stingless bee was done manually using fine tip forceps and samples were put in killing jars. Later these were pinned, labelled and oven dried in the laboratory. Some specimens were kept at Gunung Ledang Johor National Park gallery. Pieces of sandalwood barks were also sampled manually by cutting up some small pieces from old and abandoned tree. At Tanjung Emas samples of the bunga tanjung were collected and plant parts were made into voucher specimens. At Tanjung Ketapang since birds seemed to dominate, they were observed using binocular, for three days consequently; in the morning and in the

evening. To identify bird species they were photographed and identified using the guidebook entitled A Field Guide to the Birds of Peninsular Malaysia and Singapore, by Jeyarajasingam [12].

At the end of the research souvenir prototypes were made to complement the theme of the nature tourism package. Five souvenir prototypes were created using several methods. For the miniature melangi soap to promote the recognition of Tanjung Emas, blocks of clear soap base in large blocks was bought on-line from Green Herbology, dissolved and poured into small chocolate molds, half way full. The melangi flowers that had been air dried was then put singly into each mold and this was followed by pouring in more dissolved soap to top up. Stingless bee specimens were collected at Gunung Ledang Johor National Park. It was curated right after sampling and pinned into wooden insect box. Crushed mothball was sprinkled all over insect box to avoid specimens being eaten by pest. The herbs tea that were bought in bulk was then repackaged in small gift boxes. The tea gift produced for Nasuha Herbs & Spice Farm could be sold as a tester for tourist to try or buy as give away gifts for family and friends. Some good Wool thread was crocheted into mushroom shape and stuffed with fiberfill and sewed up to close the opening. For finishing, a key chain ring was attached to the mushroom stalk.

3. Results and Discussion

3.1. Potential Nature Tourism at Muar and Tangkak

3.1.1 *Tanjung Emas and Tanjung Ketapang, Muar.* Tanjung Emas, or translated as the ‘Golden Cape’ is adjacent to the Muar River, and located at Taman Sri Tanjung, 84000 Muar, Johor. It is a famous location for viewing sunset, so popular that it known as the “Sunset of Muar” experience [10]. One of the dominating features of Tanjung Emas is the bunga tanjung (*Mimusops elengi*), a medium-sized tree that could be found in tropical forests in South Asia, Southeast Asia and Northern Australia. This is an evergreen tree reaching a height of about 16 m. It flowers in April, and fruiting occurs in June. Flowers are small of about 1.5cm in diameter cream coloured, with radiating slim long petals, and scented (Figure 2). Bark is thick and appears dark brownish black or grayish black in colour, with striations and a few cracks on the surface. The tree may reach up to a height of 9–18 m with a circumference of 1 m at breast height [13]. Known locally as Spanish cherry, Asian bullet wood and Pokok bunga tanjung, *Mimusops elengi* belongs to the Sapotaceae family [14]. This large ornamental evergreen tree is cultivated in many parts of Asian countries (India Burma and Pakistan) reared in gardens for its fragrant flower [14], including Malaysia. In Ayuverda (traditional Indian system of medicine), the various plant components of *Mimusops elengi* like the bark, fruit and seeds possess several medicinal properties such as astringent, tonic and febrifuge where chemical studies have shown that the bark contains tannin, some caoutchouc, wax, starch and ash whilst the flower contains volatile oil as well as seed contains fixed fatty oil. Through preclinical studies, it is shown that this legendary plant has phytochemicals that possess Analgesic, Antibiotic, Antihyperlipidemic, Anti-inflammatory, Antimicrobial, Antioxidant, Antipyretic, Cytotoxic, Congestive enhancing and Gingival properties [15].



Figure 2. *Mimusops elengi*

Tanjung Ketapang which is next to Tanjung Emas is located at Jalan Sultanah, Taman Sri Tanjung, 84000 Muar, Johor and facing the Malacca Straits. Both Tanjung Emas and Tanjung Ketapang are famous for their mangrove forest along the Muar river, on the opposite bank. Mangroves are important in coastline protection against erosive wave action and strong coastal wind, and serve as natural barriers against tsunamis and torrential storms [16]. The abundance of mangrove in Tanjung Ketapang is used as a tourism attraction in Muar where Tanjung Ketapang recreational area was upgraded through the construction of a 50m long concrete bridge to connect the coastal mangrove forest to the main road. The mangrove forest is home to wild animal like macaques (*Macaca fascicularis*). There are visitors who feed the macaques during noon and evening hours. Most macaques are tame and friendly as long there are no provocation towards them as they also allow visitors to rub their back. However, the feeding activity should be prohibited to prevent a behaviour change over food dependant on food from human. It is advisable for visitors not to bring any plastic bag since the sound and color of it could initiate their urge to go to approach visitors for food.

Mangrove forest is also well-known for mudskippers. Mudskippers are gobies that have become adapted to an amphibious lifestyle. They occur along the muddy shores of the intertidal areas in estuarine habitats and mangrove swamps of the Indo-Pacific region [17]. Murdy [18] reported the presence of 10 genera including 34 species found worldwide and 8 species from 6 genera could be found in the Peninsular Malaysia [19,20,21,22,18,23,24]. Mudskippers are very sensitive to ambient environment and this potential would be beneficial for new researches on this species especially its ecological importance in detecting pollution levels in coastal water ecosystems. Abundance and distribution of mudskippers on land as well as in coastal waters could be considered as a direct indicator of habitat health [25]. *Boleophthalmus pectinirostris* or locally known as blue spotted mudskipper is native to the Indian Ocean and the western Pacific Ocean. This species has rather odd behaviour that could intrigue visitors to watch it for hours. There is no special package for mudskipper watching in Tanjung Ketapang yet; and its enticing behavior could be potential content in developing them as nature tourism products.

Degree of attraction is an element that dictates the motivation of most tourists; hence it is important to identify existing and potential nature tourism products in nature tourism destination. Intriguing information could help to promote nature tourism destinations to the foreigner, especially nature loving tourists. Although, locals come to the parks daily for their jogging routine, nobody aside from nature tourist ever really acknowledge the nature-based attraction that could either be ecosystem based and/or organism based. Mangrove ecosystem, Muar River Cruise, mollusk and mudskipper habitats are examples of ecosystem-based nature tourism product whilst *Macaca fascicularis* and bird watching are examples of organism-based nature tourism product.

Oyster farming is one of the nature tourism activities in Muar River, organized by the cruise which include focussing tourists who want to see closely how fishermen dive into the river bed to get the oyster. The search for oysters is done for about three to four hours - at the time of the 'banir' water, which is a calm condition in between the tides of Muar River. The Muar River oyster gets a good demand, where interested individual would proceed to big seafood restaurants and certain hotels to feast on oysters known for their delicious and rich nutrition, good for health; making it much popular. There are three species of oyster which are tiram kapak, tiram putih dan tiram selipar, but the most popular is tiram putih especially among the Chinese. Realizing the uniqueness of the oysters in the area, a research center developed by Universiti Tun Hussein Onn Malaysia (UTHM) Pagoh Campus with cooperation from Universiti Sains Malaysia (USM) and Universiti Putra Malaysia (UPM) is known as Oyster Bay commenced on October 1, 2018. This project would be a catalyst for economic growth in this area, especially in the tourism sector in the district and will further benefits the local community [26].

The uniqueness of nature attraction in Tanjung Ketapang could be useful in making a souvenir. For example, a miniature melangi soap is made from Bunga Tanjung which is well known for its peculiar fragrance (Figure 3). As for Tanjung Ketapang, located by the shoreline, there are many bird's species that could be observed. An observation carried out in Tanjung Ketapang for three days from 12th October 2018 until 14th October 2018 resulted in a list of 41 bird species (Table 1).



Figure 3. Flower soap

The Shannon Weiner Index for bird's diversity at Tanjung Ketapang Recreational Park is 3.03652. The high diversity of birds enables bird watching activities to be done at the area (Table 1). Visitors will only need an extra tool of binocular to enhance bird watching experience. Apart from that, although there is no observation on the diversity of mudskipper considering visitors will notice they are abundant by glance, mudskipper also can be integrated as nature tourism product of this particular destination. For example, in Tanjung Piai, the study of mudskipper through observation and experiment shown that mudskipper have potential to be developed as tourism product where the development of mudskipper into tourism product not only aim to gain benefit, but also can promote the nature park in Johor and increase the awareness on conservation among public [27].

Table 1. Total number of bird individuals found in Tanjung Ketapang, Muar

No	Birds List	Scientific Name	IUCN Status	No of Individuals
1	Ashy Tailorbird	<i>Orthotomus ruficeps</i>	(LC) Least Concern	1
2	Asian Glossy Starling	<i>Aplonis panayensis</i>	(LC) Least Concern	2
3	Asian red eyed Bulbul	<i>Pycnonotus brunneus</i>	(LC) Least Concern	3
4	Black-naped Oriole	<i>Oriolus chinensis</i>	(LC) Least Concern	18
5	Blue-tailed bee eater	<i>Merops philippinus</i>	(LC) Least Concern	5
6	Blue-throated bee eater	<i>Merops viridis</i>	(LC) Least Concern	2
7	Brahminy Kite	<i>Haliastur indus</i>	(LC) Least Concern	35

8	Brown headed Seagull	<i>Larus brunnicephalus</i>	(LC) Least Concern	10
9	Brown Shrike	<i>Lanius cristatus</i>	(LC) Least Concern	1
10	Brown throated Sunbird	<i>Anthreptes malacensis</i>	(LC) Least Concern	7
11	Brown-capped Pygmy Woodpecker	<i>Picooides nanus</i>	(LC) Least Concern	2
12	Common Iora	<i>Aegithina tiphia</i>	(LC) Least Concern	5
13	Common Myna	<i>Acridotheres tristis</i>	(LC) Least Concern	10
14	Common Redshank	<i>Tringa tetanus</i>	(LC) Least Concern	9
15	Curlew Sandpiper	<i>Calidris ferruginea</i>	(NT) Near Threatened	6
16	Dark necked Tailorbird	<i>Orthotomus atrogularis</i>	(LC) Least Concern	1
17	Finsch's Bulbul	<i>Alophoixus finschii</i>	(LC) Least Concern	2
18	Forest Wagtail	<i>Dendronanthus indicus</i>	(LC) Least Concern	3
18	Golden Babbler	<i>Cyanoderma chrysaeum</i>	(LC) Least Concern	10
20	Great Egret	<i>Ardea alba</i>	(LC) Least Concern	10
21	Grey Heron	<i>Ardea cinereal</i>	(LC) Least Concern	68
22	Laced woodpecker	<i>Picus vittatus</i>	(LC) Least Concern	1
23	Lesser adjutant	<i>Leptoptilos javanicus</i>	(VU) Vulnerable	9
24	Little Egret	<i>Egretta garzetta</i>	(LC) Least Concern	25
25	Little Heron	<i>Butorides striata</i>	(LC) Least Concern	43
26	Magpie Robin	<i>Copsychus saularis</i>	(LC) Least Concern	13
27	Malaysian pied Fantail	<i>Rhipidura javanica</i>	(LC) Least Concern	10
28	Mongolian Sandplover	<i>Charadrius mongolus</i>	(LC) Least Concern	33
29	Oriental Dollarbird	<i>Eurystomus orientalis</i>	(LC) Least Concern	1
30	Pacific Swallow	<i>Hirundo tahitica</i>	(LC) Least Concern	102
31	Peaceful Dove	<i>Geopelia placida</i>	(LC) Least Concern	13
32	Pink neck, Green pigeon	<i>Treron vernans</i>	(LC) Least Concern	38
33	Red breasted Parakeet	<i>Psittacula alexandri</i>	(NT) Near Threatened	2
34	Scaly breasted Munia	<i>Lonchura punctulate</i>	(LC) Least Concern	5
35	Spotted necked Dove	<i>Spilopelia chinensis</i>	(LC) Least Concern	7
36	White breasted-hen	<i>Amaurornis phoenicurus</i>	(LC) Least Concern	16
37	White-collared Kingfisher	<i>Todiramphus chloris</i>	(LC) Least Concern	1
38	White-throated Kingfisher	<i>Halcyon gularis</i>	(LC) Least Concern	7
39	White-vented Myna	<i>Acridotheres javanicus</i>	(VU) Vulnerable	27
40	Yellow Bittern	<i>Ixobrychus sinensis</i>	(LC) Least Concern	2
41	Yellow vented Bulbul	<i>Pycnonotus goiavier</i>	(LC) Least Concern	4
TOTAL individuals				569

3.1.2 Nasuha Herbs & Spice Farm, Muar. Participating in touring the herbal farm, the company has a good tourism package but improvement could be made on the information used in interpretation. Presently, the use of herbs in healthcare and as remedies are popular not only in Malaysia but the world over. Tourists would be looking forward to enjoy a good presentation on these aspects at the farm. Nasuha Herbs & Spice Farm has myriad of products made from herbs, ranging from herbs powder for cooking, insect repellent, hair oil, soap and most prominent products are their herbs tea. Three of those herbs' tea were chosen to assist in souvenirs production as one of the end products of this research. These tea products are Noni Herbal Tea Plus, Centella Herbal Tea Plus and Gora Herbal Tea Plus. Each herb tea chosen has fascinating health benefits which varies, depending on their herbs type; that could attract tourists to try their products. However, a little improvement from existing tourism package can be made such as the souvenir of teabags which will give a better option for visitors to try a smaller and a simpler trial product from Nasuha.

3.1.3 Gunung Ledang Johor National Park, Tangkak. Gunung Ledang Resort is a part of Gunung Ledang Johor National Park and is located at Bt.28, Jalan Segamat, 84020, Sagil, Tangkak. Blessed by mother nature, its rainforest ecosystem is concentrated with flora and fauna. The main attraction in

Gunung Ledang is their waterfall. According to folk story, waterfall of Gunung Ledang is the place where Puteri (princess) Gunung Ledang spends most of her time playing and cleaning herself. She makes her home in a cavernous cave on the summit of the mountain, and here she lies on a raised couch decorated with dead men's bones: she takes the form of a beautiful young girl, adorned with silk and gold [28]. There are two unsung attractions that have potential to be integrated into new nature tourism product and those two are stingless bees and *Aquilaria malaccensis* (gaharu). Currently there is no existing tourism package available at this resort. People come and do activities as they wished.

At the Gunung Ledang Johor National Park through observation and talking to the rangers and local people, this research proposed two tourism products. Firstly, the stingless bee, which is currently an attractive insect and much talked about especially the health potentials of their honey. Secondly is the inquisitive sandalwood or gaharu. There are two types of stingless bee species found common at the foot Gunung Ledang, in the vicinity of the National Park. Those two stingless bee species are *Heterotrigona itama* and *Geniotrigona thoracica*. The benefits of honey bee had been studied scientifically and are used as a cure for various types of ailments such as cough. Presently, it is a common trend for people to rear stingless bee that is easy to care, convenient and can be cultivated in their home yard. Rearing stingless bee and harvesting its honey has been shown to contribute to generate additional income even to town people, helping out to ease the cost of living [29]. *Aquilaria malaccensis* (gaharu) can be found along the trail of jungle trekking at Gunung Ledang Resort. Traditionally it is claimed that the bark of the tree could heal many ailments. Scientifically, its phytochemical components are used to make perfume. Locally called gaharu, the aromatic smell produced by the bark once burnt is claimed to heal physical injuries; only if you acquire the bark that has been shredded or wounded by a knife. In addition it is claimed that the older is the bark, wound healing works better. The demonstration of making the perfume could be made as one of nature tourism attraction in the park.

3.1.4. C&C Mushroom Cultivation Farm, Tangkak. At C&C Mushroom Cultivation Farm Sdn. Bhd., the existing tourism package could be made more interesting by putting in more information on diversity of fungi, uses of fungi, edible mushroom, nutrient values of mushroom and the proses of cultivation. A prepared booklet could be given out to tourists during the tour and an open small café provides a "cooked/fried mushroom". The tourists or visitors should also be given opportunity to bring back a cute smoochy crocheted mushroom keychain and perhaps booklets on recipe using mushroom.

3.2 Additional notes on Nature Tourism Package for Muar

A package of tours to historical buildings should be created for tourists and for that purpose, there is a need to restart a "becak" service which is now extinct in the city. The service could be located at the mouth of the Muar river. The responsible party should conserve, preserve and develop existing historical sites such as Kubayan Bentayan in Jalan Maharani, Tomb of Sultan Alauddin Riayat Shah in Kampung Raja, Pagoh and Tomb Giant Panglima in Jalan Joned. Currently, there are idle spaces and seem to have no historical value for example Bentayan Fort, the very historical site of the country, the last fortress of the Malay Sultanate of Malacca after Melaka was conquered by the Portuguese [2]. To prepare for Muar as a tourist town, hotels in the city need to be upgraded and budget hotels operating illegally also need to be stopped. Hotel operators need to work together with the Johor tourism department by providing pamphlets promoting interesting and historical places of Muar.

As a way of utilizing the Muar riverfront and coastline stretching along the city, a plan to use them as venues for holding regular or annual activities should be thought of. Examples of kayaking, floating boat or water sports are appropriate. Muar with 2356.12 square kilometers is strategically positioned for having tolls in Tangkak, Pagoh and Bukit Gambir, all connecting the North-South Expressway. In addition, it is only 40 kilometers from Melaka and takes about two and a half hours to Johor Bahru or Kuala Lumpur to make the city potentially attract investment from outside as well as reputation in its tourism sector. Muar could be the gateway to northern Johor as the area is still lagging behind the iconic southern Johor like Iskandar Malaysia, Iskandar Puteri or Oil and Petrochemical Integrated Development (RAPID) [2].

Table 2 summarizes the chosen destination, their nature tourism products and potential souvenirs. The proposed tourism package consists of two days and one-night trip. Tentative of activities for the package are shown in Table 3. The price proposed for the package is RM 250.00 per person excluding accommodation and food. This price was based on time and effort of a green badge guide.

Table 2. Nature tourism destinations in Muar and Tangkak, Johor with their potential nature tourism products and souvenirs.

Location	Nature tourism product	Souvenirs
Gunung Ledang Resort, Tangkak	Stingless bee and <i>Aquilaria malaccensis</i>	Stingless bee insect box
C&C Mushroom Cultivation Farm Sdn. Bhd.	Mushroom Agro Tourism	Mushroom keychain
Nasuha Herbs and Spice Farm and Resort	Herbs Farm	Tea gift
Tanjung Ketapang and Tanjung Emas Park,	<i>Mimusops elengi</i> and Bird Watching	Flower soap (<i>Mimusops elengi</i>)

The nature tourism packages were formulated based on nature tourism products which had been tested through eight criteria which are endemism, rarity, reliability of sightings, morphological attractiveness, behavioural enticement, safety, and linkage to local cultures. These criteria are the governing factors behind the success of the advanced nature tourism attractions [30]. Adding to that, destination that can prosper and sustain itself usually are aided by the comprehensive factor of five 'A's of tourism which are accessibility, accommodation, amenities, attractions and activities [31]. Through scan observation and survey of each destination, nature tourism destinations are summarized based on eight nature tourism criteria. Gunong Ledang Resort Sdn. Bhd. possessed seven criteria ranging from the rarity and reliability of sightings of stingless bee and *Aquilaria malaccensis* as tourism products. Apart from the enticing morphological and behavioural of stingless bee, it is also a very safe activity to mingle around these species as it is harmless. Both stingless bee and *Aquilaria malaccensis* play important roles in sustaining their ecological environment.

Each component (biotic or abiotic) in the forest depends on each other directly or indirectly to sustain itself. Preservations and conservations of it are much needed thus nature tourism can be the alternative way to conserve these natural resources without consuming the products [32]. C&C Mushroom Cultivation Farm Sdn. Bhd. only fulfil three out of eight nature tourism criteria. Those three are reliability of sightings, morphological attractive and safe. Although this destination checked the least criteria among other research destination, nature tourism in the form of Agrotourism can still be done here. Although they are still lacking in the content of agrotourism activities due to it is still in early establishment phase, enriching the content in the form of knowledge can assist product developments. Element of conservations and importance of tourism products which is mushroom, can be integrated through proper research and immense understanding towards agrotourism [33]. The package is shown in Table 3.

Table 3. Tentative Package for a Nature Tourism in Muar and Tangkak, Johor.

Time	Activities
Day 1	
5.00 AM	Hiking up Gunung Ledang
6.00 AM	Site view
7.00 AM	Breakfast (English breakfast)
8.00 AM	Interpretation sessions on Gunung Ledang's biodiversity
9.00 AM	Hiking down Gunung Ledang
10.00 AM	Interpretation and observation on <i>Aquilaria malaccensis</i>
11.00 AM	Interpretation and observation on stingless bee

12. 00 PM	Lunch (quail birds)
1.00 PM	Visiting Gunung Ledang herbs farm
2.00 PM	Check in (Gunong Ledang Resort Sdn.Bhd.)
3.00 PM	Rest
4.00 PM	Rest
5.00 PM	Water activities at waterfall
7.00 PM	Water activities at waterfall
8.00 PM	Dinner (fish)
9.00 PM	Activities end
Day 2	
8.00 AM	Exercise in the forest
9.00 AM	Breakfast (English breakfast)
10.00 AM	Visiting C&C Mushroom Cultivation Farm Sdn. Bhd.
11.00 AM	Visiting Nasuha Herbs & Spice Farm
	Tea Testing
12. 00 PM	Interpretation on Herbs
1.00 PM	Lunch (prepared by Nasuha Herbs & Spice Farm, menu depends on chosen package)
2.00 PM	Farm tour and DIY activities using herbs
3.00 PM	Rest
4.00 PM	Visiting Tanjung Ketapang and Tanjung Emas recreational park, Muar Muar Rivercruise
5.00 PM	Bird Watching (binocular given)
6.00 PM	Sunset Watching
7.00 PM	Dinner at Tanjung Emas food court (mee bandung and ABC)
8.00 PM	Activities end

Next, Nasuha Herbs & Spice Farm has advantage over Tanjung Emas and Tanjung Ketapang, Muar by having one extra criterion which is cultural link. Apart from running restaurant and Agrotourism business, this company has their own herbs products under the brand of “Mak Siti” where the products are in the form of spices such as turmeric powder, curry, korma and other culinary spice powder. It is a norm in Malay or Malaysian community in general to use these cooking powders in their cooking. Hence, their products are being used in daily basis making it linked with everyday activities of consumers. Agro tourism activities are being done by visiting the herbs farm by tram. The fact that herbs farm here are grown in man-made forest to control the quality of the herbs is an outstanding and important feature ecologically.

Last but not least is Tanjung Emas and Tanjung Ketapang, Muar. These areas are practically a recreational park that is blessed with mangrove. Local authorities should make full use of this opportunity especially considering they have high diversity of shore birds and many other interesting fauna like mudskipper. Birds and mudskipper have enticing behaviour and are very fascinating to observe. Both group of fauna play critical roles in managing the mangrove ecosystem nearby. This particular mangrove ecosystem provides food and shelter for available flora and fauna species and despite having interferences of human presence, loud boat noises and other predators they remained resilient and flourish to survive.

4. Conclusion

In this research four tourism destinations were studied. Results showed that these four are viable destinations. However, improvement could be made in various ways. At Gunung Ledang Resort, a few tourism packages could be developed so that people visiting the destination could have a better experience and satisfying nature tourism. As it is the site is brimming with nature awaiting to be packaged to enhance the tourism industry. At the National Park itself, two products were discovered, the stingless bee and *gaharu* tree.

Agrotourism experience at the C&C Mushroom Cultivation Farm Sdn. could be made better through staff training on scientific information of edible mushroom. In addition, a practical souvenir had been tried, in the form of a crocheted mushroom key-chain. Proposed are better promotional brochures and perhaps a recipe book on the use of mushroom in cooking.

In Nasuha Herbs & Spice Farm, again improvement is proposed for the touring experience. More information on uses of herbs could be useful and satisfying for the tourists. Tea bags souvenir maybe useful for the company to think about.

This research aided in filling the knowledge gap of tourism context in these chosen destinations. Information resulted from this research strongly support the execution of nature tourism business in Muar and Tangkak.

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