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DECLARATION

The materials in this thesis are original except for quotations, excerpts, summaries, and references, which have been duly acknowledged.

5 MAY 2008

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ABSTRAK

Kewujudan badak Sumatera (Dicerorhinus sumatrensis harrissoni) adalah penting terhadap ekosistem dan sering dikaitkan dengan kewujudan species lain. Namun demikian, kini jumlahnya semakin berkurangan di seluruh dunia dan daya usaha pemuliharaannya amat diperlukan untuk melindungi haiwan ini. Kepercayaan dan mitos terhadap badak Sumatera di seluruh dunia telah melengahkan serta menghalang usaha pemuliharaan habitat haiwan ini. Dalam situasi spesies haiwan lain (seperti monyet Belanda, Nasalis larvatus dan orang utan, Pongo pymaeus), industri pelancongan telah secara tidak langsung memperbaiki sikap serta kefahaman terhadap kewujudan spesies tersebut. Contoh tersebut menunjukkan bahawa pelancongan-badak adalah berpotensi untuk melindungi populasi badak Sumatera ini, di samping dapat memberi manfaat ekonomi dan sosial kepada pemegang-pemegang amanah Tabin terutamanya penduduk tempatan. Oleh yang demikian, objektif melakukan kajian ini adalah untuk menyelidik potensi badak Sumatera untuk diketengahkan sebagai produk pelancongan hidupan liar; untuk mengkaji peranan pelancongan hidupan liar serta perkaitannya secara khusus dalam pemuliharaan badak Sumatera; serta membuat kajian terhadap produk lain yang terdapat di Rizab Hidupan Liar Tabin. Kajian daya tarikan badak Sumatera telah dilakukan berdasarkan tujuh kriteria yang diambil serta diubahsuai oleh Kueh (2005) dari WTO/UNDP (1992) yang mana ia merangkumi; endemisme, kejarangan, penemuan, daya tarikan morfologi, keselamatan serta hubungan dengan budaya tempatan. Majoriti pemegang amanah amat berminat terhadap badak Sumatera kerana ia merupakan haiwan yang jarang ditemui, selamat serta statusnya sebagai haiwan terancam dunia. Pun begitu, haiwan ini amat sukar untuk ditemui dalam hutan Tabin ekoran populasinya yang amat kecil. Namun begitu, Rizab Hidupan Liar Tabin juga menyediakan tarikan lain selain badak Sumatera, seperti keindahan lanskap hutan Tabin, kepelbagaian flora dan fauna serta kehidupan budaya tempatan yang menarik. Bukan itu sahaja, bahkan Rizab Hidupan Liar Tabin juga menyediakan tempat penginapan yang selesa serta kemudahan lain untuk pelancongnya. Pelancongan hidupan liar turut memainkan peranan dalam membantu mempertingkatkan sikap serta kedayatahanan spesies dan contoh terbaik dapat dilihat pada spesies seperti orang utan dan monyet Belanda. Pun begitu, pelancongan-badak sahaja tidak boleh menjanjikan kemajuan sesebuah pelancongan hidupan liar kerana kajian mendalam masih diperlukan terutamanya mengenai tahap kepuashatian pelancong.

Kata kunci: Badak Sumatera, pelancongan-badak, konservasi, tahap kepuashatian.

ABSTRACT

THE POTENTIAL OF RHINO-TOURISM IN TABIN WILDLIFE RESERVE. LAHAD DATU, SABAH.

Sumatran rhinoceros (*Dicerorhinus sumatrensis* harrissoni) is beneficial to ecosystems, and is often keystone species. However, Sumatran rhinoceros populations are declining worldwide and conservation efforts are needed to conserve the animal throughout the world. Worldwide, superstitions and myths of Sumatran rhinoceros prevail and prolong human intervention toward the rhino's habitats. In the case of other species (e.g. proboscis monkeys, *Nasalis larvatus* and orang utans, *Pongo pymaeus*), tourism efforts have led to improving attitudes and species viability. These examples suggest that rhino-tourism has a potential to conserve Sumatran rhinoceros populations while providing social and economic benefits to stakeholders especially the locals in host communities. Therefore, the objectives of the study are to investigate the potential of Sumatran rhinoceros as wildlife tourism product, to explore the role of wildlife tourism and how it specifically relates to Sumatran rhinoceros conservation, and to investigate other product existing in Tabin Wildlife Reserve. The attraction of Sumatran rhinoceros was studied based on seven criteria adopted and improved by Kueh (2005) from WTO/UNDP (1992) that include; endemism, rarity, reliability of sightings, morphological attractiveness, behavioral enticement, safety as well as linkage to local cultures. Majority of the stakeholders are very interested in Sumatran rhinoceros as the animal is rare, safe and its status as critically endangered animal of the world. However, it is of difficult to have a direct sighting of the animal in Tabin's forest as the population is very small. Albeit that rhinos are very hard to encounter with, Tabin Wildlife Reserve has a lot to offer apart from Sumatran rhinoceros, such as beautiful landscape and scenery of Tabin, other unique flora and fauna of Tabin and local community's fascinating lifestyle. In addition, Tabin Wildlife Resort also offered comfortable and spectacular accommodation and other facilities for Tabin's tourists. Moreover, tourism efforts have led to improving attitudes and species viability and examples of successful tourism and conservation of species are like the orang utans and proboscis monkeys. Conversely, in the context of Sumatran rhinoceros, rhino-tourism alone cannot be promoted as more research needs to be done especially on visitors' level of satisfaction.

Keywords: Sumatran rhinoceros, rhino-tourism, conservation, level of satisfaction.

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LIST OF ABBREVIATIONS

BBEC	Bornean Biodiversity Ecosystem Conservation
DVFC	Danum Valley Field Center
EPU	Economic Planning Unit
FRC	Forest Research Centre
GIS	Geographical Information System
GPS	Global Positioning System
IUCN	The World Conservation Union
JICA	Japan International Cooperation Agency
Kg.	Kampung/Kampong
RPU	Rhino Protection Unit
Sg.	Sungai
SOSRB	SOS Rhino (Borneo) Bhd.
STB	Sabah Tourism Board
TWR	Tabin Wildlife Reserve
UNDP	United Nations Development Programme
VJR	Virgin Jungle Reserve
VMY	Visit Malaysia Year
WBT	Wildlife-Based Tourism
WTO	World Tourism Organization
WTO/UNDP	World Tourism Organization/United Nation Development Programme
WTTC	World Travel and Tourism Council
WWF	World Wildlife Fund
WWFM	World Wildlife Fund – Malaysia

CHAPTER 1

INTRODUCTION

1.0 Background

Tourism is often described as the world's "biggest" industry on the basis of its contribution to global gross domestic product (GDP), the number of jobs it generates, and the number of clients it serves. According to the World Travel and Tourism Council (2005), tourism and its related economic activities generate 11% of Global Domestic Product, employ 200 million people, and transport nearly 700 million international travelers per year. These figures are expected to double by 2020. Tourism also represents one of the top five exports for 83% of all countries and is the main source of foreign currency for 38% of countries. Simply put, tourism is one of the largest, perhaps the largest, industry on our planet (McCool & Moisey, 2001).

Tourism has long played an important role in the economy of Malaysia, representing the second most important industry sector and generating at least RM9.6 billion of the country's gross domestic product (Chin *et al.*, 2000).Within the tourism industry worldwide, ecotourism is one of the fastest growing sectors (Eagles, 1995; Chin *et al.*, 2000). The World Tourism Organization (WTO) has recently estimated that ecotourism is worth some US$20 billion a year, and together with nature-based tourism, accounts for 20% of global international travel (WTO, 1998; Chin *et al.*, 2000). In the Asia-Pacific region, ecotourism has grown faster than tourism generally (Lindberg *et al.*, 1998; Rahimatsah, 2002). Ecotourism has therefore come to signify an attractive investment proposition. Thus, the challenges posed in striking a balance between conservation and tourism has been a goal for resource managers, community leaders, and tourism officials since the appearance of modern travel. This leads to park managers facing serious challenges in attempting to comply with the demands of

biodiversity conservation from the nature lovers and the pressure from the local or indigenous people of the area of concerns.

Tourism was granted high priority in 1987, with the establishment of a separate Ministry of Culture and Tourism which was subsequently expanded to Ministry of Culture, Arts and Tourism in 1990 (Rahimatsah, 2002). It was recognised as an important tool to increase economic growth, raise the quality of life, create employment, and most important, improve the overall balance of payments by helping to offset deficits in other sectors. It was then recognized as a vital economic activity and there was full support from the government in terms of funding, planning, co-ordination, regulation and enforcement.

1.1 Statement of the Research Problem

In Malaysia, several studies indicate that there is an increasing demand for nature-based tourism (Pianzin, 1992; Cousineau, 1995; Zainuddin, 1995; Zainab 1997; Rahimatsah, 2002). Therefore, it is of duty of the Government to create and appeased the hunger for nature by utilizing tourism's potential for conservation and economic development.

Sumatran rhinoceros (*Dicerorhinus sumatrensis* harrissoni) is beneficial to ecosystems, and is often keystone species. Worldwide, superstitions and myths of Sumatran rhinoceros prevail and prolong human intervention toward the rhino's habitats. The high commercial value for rhinoceros products, believed by Asians as having medicinal properties, continues to be a draw card. Rhinoceros horn is a highly desired aphrodisiac and is also believed to reduce fever; the hide is said to cure skin diseases and the entrails relieve constipation. In the case of other species (e.g. proboscis monkeys and orang utans), tourism efforts have led to improving attitudes and species viability. These examples suggest that rhino tourism has a potential to conserve Sumatran rhinoceros populations while providing social and economic benefits to local stakeholders. Therefore, the research is done to foresee the potential of tourism industry in helping the protection and conservation of Sumatran rhinoceros in Sabah

especially in Tabin Wildlife Reserve, thus, led to the incorporation of many stakeholders in rhino-tourism, which eventually led to a win-win situation for every stakeholders in terms of economic beneficial and advantages as well as in rhino management plan.

1.2 Rationale and Purpose of Study

The underlying principle of this research is to promote the conservation and protection of Sumatran rhinoceros (*Dicerorhinus sumatrensis* harrissoni) in Tabin Wildlife Reserve through rhino-tourism.

To achieve the mentioned goal, the following objectives will be looked into. The objectives are to:

1. Investigate the potential of Sumatran rhinoceros, *Dicerorhinus sumatrensis* harrissoni as wildlife tourism product;
2. Explore the role of wildlife tourism and how it specifically relates to Sumatran rhinoceros, *Dicerorhinus sumatrensis* harrissoni conservation;
3. Investigate other products existing in Tabin Wildlife Reserve.

1.3 Significance of the Study

Presently, there has been an increased in the number of tourists who are showing interest in nature-based tourism development in protected areas. However, to ensure that the nature-based tourism industry can provide rare and unique as well as endemic species of wild flora and fauna is very difficult as it requires the understanding of its theories, principles and practices of the three fields:

1. Tourism,
2. Nature resources, and
3. Protected area.

This research will focus on the development and planning of a wildlife-based tourism. The main focus of this study is to identify the key species (rare and endangered) of the protected area and in this research known as Tabin Wildlife Reserve,

so as to ensure a long term conservation and protection efforts not only to the key species but also include its surrounding environment that is its habitat. Moreover, with the promotion of the key species in the area one can eventually help to save the population through education and awareness activities via the development and planning of wildlife-based tourism. As for this research, the key species identified is the Sumatran rhinoceros (*Dicerorhinus sumatrensis* harrissoni).

The results of this study could be of benefit in many ways to planning practitioners, park managers and researchers. First, the findings and process used in the study is expected to contribute positively towards the protection and conservation of rare and endangered species of wildlife such as the Sumatran rhinoceros (*D. sumatrensis* harrissoni) as this study will emphasize on the effort to safeguard the critically endangered species from extinction.

Secondly, the study may develop a new destination area and product in term of wildlife-based tourism that will help to diversify the tourism industry in Malaysia especially in Sabah. It is hoped that the study would be useful to government, the private sector, and education providers in the effort to safe, protect and conserve the endangered species of Sabah particularly Sumatran rhinoceros (*D. sumatrensis* harrissoni).

Finally, from the findings of this study, it is hopeful that recommendation towards a WBT (wildlife-based tourism)-planning approach that is compatible with the resource base of the protected area and sensitive to the requirements of visitors can be highlighted. It is expected to enlighten planners on the importance of taking into account from infancy (conceptualization) stage of planning the state and availability of the natural resources, visitors' satisfaction and the needs to work closely with the local community.

CHAPTER 2

LITERATURE REVIEWS

2.0 Tourism

Tourism is "the temporary movement of people to destinations outside their normal places of work and residence, the activities undertaken during their stay in those destinations, and the facilities created to cater to their needs" (Mathieson & Wall, 1982). It is often difficult to distinguish between tourism and recreation, as they are interrelated. Tourism implies traveling a distance from home, while recreation is defined as the activities undertaken during leisure time (McIntosh & Goeldner, 1990).

2.0.1 Tourism Market Segment

There is no such thing as the "average protected area visitor". According to Eagles *et al.* (2002), markets comprise many segments, each of which has somewhat different characteristics, expectations, activity participation and spending patterns. Marketing exploits these visitor segments by comparing and matching them with the biophysical and cultural attributes of the park, and then sensitively promoting appropriate protected area attributes to the targeted segment. This reduces adverse impacts on the protected area, increases the economic benefits and makes it more likely that visitors are satisfied.

Therefore, understanding the different market segments interested in tourism to protected areas will allow managers of protected areas to better develop appropriate strategies for building partnerships with the tourism industry, and thus for different types of tourism (Tapper and Cochrane, 2005) and in this study, rhino-tourism in Tabin Wildlife Reserve (TWR). As TWR is regularly visited by international tourists, therefore it is best to learn the typology of the international tourists as well as to understand the needs and demands of the required services especially when one wants to promote a Sumatran rhinoceros as the sole wildlife-based tourism product. It is important to

understand the attitudes and characteristics of the tourists as selling rhino is the same as selling a "ghost" since rhino has low reliability of sightings as well as small in population number. Table 2.1 presents a typology of international tourists to protected areas.

Table 2.1: Typology of international tourists to protected areas

CATEGORY	TYPICAL CHARACTERISTICS
Explorer	Individualistic, solitary, adventurous, requires no special facilities. May be relatively well-off, but prefers not to spend much money. Rejects purpose-built tourism facilities in favor of local ones.
Backpacker	Travels for as long as possible on limited budget, often taking a year off between school/university and starting work. Hardship of local transport, cheap accommodation, etc. may qualify as travel experience, rather than understanding local culture. Enjoys trekking and scenery, but often cannot visit remote areas because of expense. Requires low-cost facilities.
Backpacker plus	Often experienced travelers, and generally in well-paid profession. More demanding in terms of facilities than Backpackers and with a higher daily spends. Genuinely desire to learn about culture and nature, and require good information.
High volume	Often inexperienced at traveling, prefer to travel in large groups, may be wealthy. Enjoy superficial aspects of local culture and natural scenery and wildlife if easy to see. Need good facilities, and will only travel far if the journey is comfortable. Includes cruise ship passengers.
General interest	May travel as Free Independent Travelers (FITs) on tailor-made itineraries with a tour operator, and often prefer security and company of group tour. Usually have limited time available for holiday. May be relatively wealthy, interested in culture, keen on nature/wildlife when not too hard to see. May be active and enjoy 'soft adventure' such as easy trekking and low-grade white-water rafting. Dislike traveling long distances without points of interest. Need good facilities, although may accept basic conditions for short periods.
Special interest	Dedicated to a particular hobby, fairly adventurous, prepared to pay to indulge hobby and have others take care of logistics. Travel as FITs or groups. May have little interest in culture. Requires special facilities and services, e.g. dive-boats, bird-guides. Accepts discomfort and long travel where necessary to achieve aims. May have active involvement, e.g. environmental research project. Prefers small groups.

Source: Cochrane (2003)

2.1 Protected Areas

Protected areas are widely held to be among the most effective means of conserving biological diversity *in situ* (McNeely and Miller, 1984; MacKinnon *et al.*, 1986; Leader-Williams *et al.*, 1990). A considerable amount of resources has been invested in their establishment over the last century or more, with the result that most countries have established or, at least, planned national systems of protected areas.

A protected area is defined by the IUCN World Commission on Protected Areas (IUCN, 1994) as:

> *"An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means."*

In practice, protected areas are managed for a wide variety of purposes which may include:

- Scientific research including biomedical prospecting,
- Wilderness protection,
- Preservation of metapopulation,
- Maintenance of environmental services,
- Protection of specific natural and cultural features,
- Tourism and recreation,
- Education,
- Sustainable use of resources from natural ecosystems, and
- Maintenance of cultural and traditional attributes.

The IUCN definition is rather more precise with respect to what is protected than that used in the Convention on Biological Diversity:

> *"A geographically defined area which is designated or regulated and managed to achieve specific conservation objectives."*

2.1.1 The Growth of Protected Areas

For more than a century, countries throughout the world have been setting aside areas for special protection because of their natural beauty and their repository status for important biodiversity. Protected areas have long been recognized as a key tool to counter the loss of the world's biodiversity (Maryati *et al.*, 2000). Over the last 40 years there has been a paradigm shift in the role of protected areas from 'national parks and reserves' to a broader conceptual and practical approach including sustainable use areas.

Today it is recognized that, in addition to their conservation function, protected areas contribute to human welfare, poverty alleviation and sustainable development. Among other things, they help protect species and genetic diversity, maintain ecosystem services, support livelihoods for local people, and provide tourism and recreational opportunities (Dowling, 1993).

Globally, the number of protected areas has been increasing significantly over the last decade and there are now more than 100,000 protected sites worldwide covering about 12% of the Earth's land surface, making them one of the earth's most significant land uses. If marine protected areas are excluded from these calculations the terrestrial extent of protected areas is some 17.1 million km^2 (11.5% of the land surface). This is almost the same area as the entire continent of South America. Summary statistics are presented in Figure 2.1a and Figure 2.1b. The total number and extent of protected areas presents the current global overview of the status of protection (Chape *et al.*, 2003).

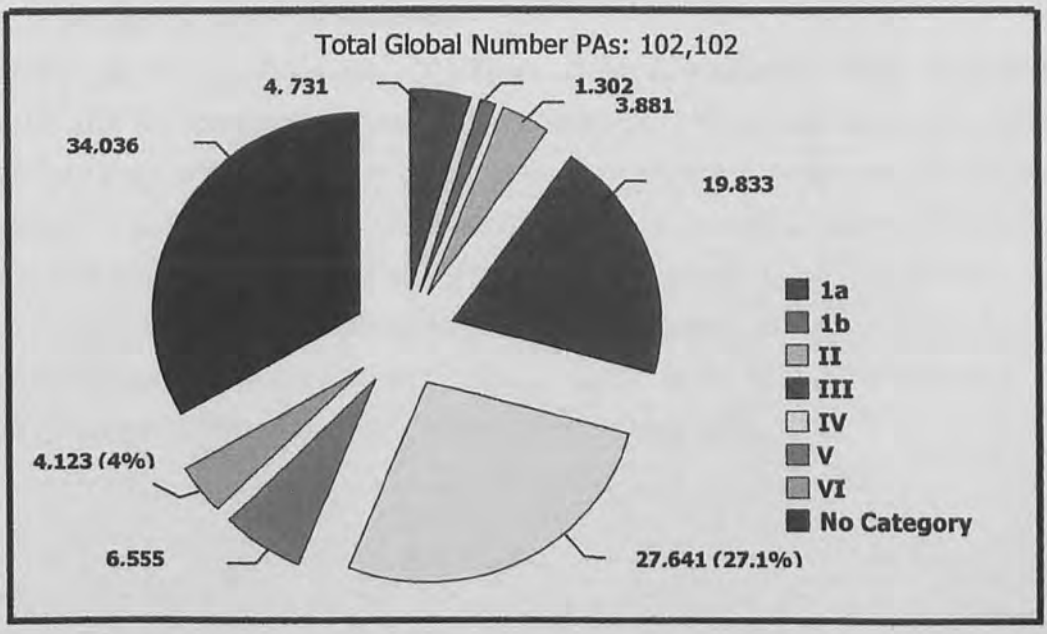

Figure 2.1(a): Global number and percentage distribution of categorized and non-categorized protected areas

Source: Chape *et al.* (2003)

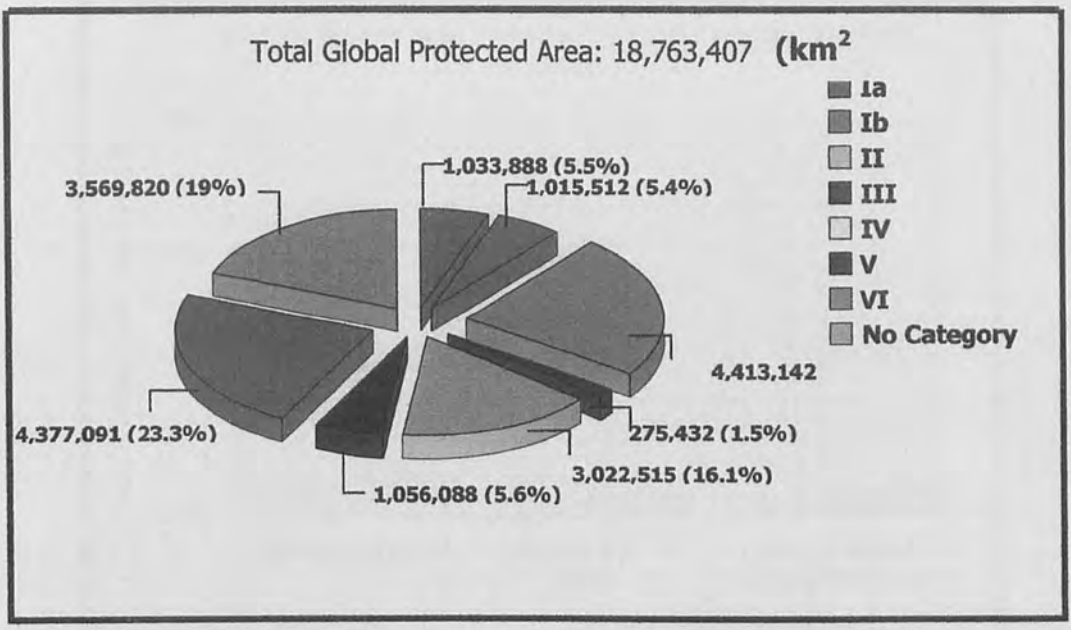

Figure 2.1(b): Global protected area number
Source: Chapel *et al.* (2003)

2.1.2 Protected Areas in Malaysia

According to Kiew (1982), Zainab (1997) and Salleh & Wayakone (1997), Malaysia has 10,101 (000 ha) total area protected for all categories (I-VI) by legislation, of which 916 (000 hectares) are allocated for nature reserves, wilderness areas and national parks (category I and II); 468 (000 hectares) for natural monuments, species management areas and protected landscapes and seascapes (category III, IV and V); whilst another 8,717 (000 hectares) are allocated for areas managed for sustainable use and unclassified areas (category VI and "other"). Figure below shows the portion of land area protected by IUCN category in Malaysia for the year 2003.

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