



Faculty of Economics and Business

**TAGANG SYSTEM DEVELOPMENT:
THE IMPACTS AND PERCEPTION
OF LOCAL COMMUNITIES IN KG. TERBAT MAWANG,
SARAWAK**

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Bachelor Degree in Economics with Honours
(International Economics)
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**TAGANG SYSTEM DEVELOPMENT: THE IMPACTS AND PERCEPTION
OF LOCAL COMMUNITIES KG. TERBAT MAWANG, SARAWAK**

RESTIWEELLA BINTI SAIB

This project is submitted in partial fulfillment of the requirements for the degree of
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Final Year Project Report



Masters



PhD



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ABSTRACT

**TAGANG SYSTEM DEVELOPMENT:
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By
Restiweella Binti Saib

Growing in popularity of tourism industry in Sarawak creates opportunities for economic development. This industry has been recognized as one of the sectors that contribute to the economic growth in the state. The number of tourists willing to visit the unexplored nature and different cultures has sparked and increase the tendency for ecotourism industry. The protected area is still at infant stage in remote area more than a decade. This study focuses on the impacts and perception of local communities on Tagang system development in Kg. Terbat Mawang, Sarawak. The respondents' feedback was analyzed using factor analysis and reliability testing. The analysis showed that three subscales components were retained including economic impact, conservation and protection, and ecotourism benefits in analysis. In short, the socioeconomic and environmental impact captured a good opportunities for economic development in ecotourism industry.

ABSTRAK

PEMBANGUNAN SISTEM TAGANG: KESAN DAN PERSEPSI PENDUDUK TEMPATAN DI KG.TERBAT MAWANG, SARAWAK

Oleh

Restiweella Binti Saib

Pertumbuhan populariti dalam industri pelancongan di Sarawak memberi peluang kepada pembangunan ekonomi. Industri ini telah diiktiraf sebagai salah satu sektor yang menyumbang kepada pertumbuhan ekonomi di negeri ini. Bilangan pelancong yang berkeinginan melawat alam semula jadi yang belum diterokai dan budaya yang berbeza telah mencetuskan dan meningkatkan kecenderungan terhadap industri ekopelancongan. Kawasan perlindungan adalah masih di peringkat awal walaupun telah dilaksanakan lebih dari satu dekad. Kajian ini memberi tumpuan kepada impak dan persepsi masyarakat tempatan terhadap pembangunan sistem Tagang di Kg. Terbat Mawang, Sarawak. Maklum balas responden telah dianalisis dengan menggunakan analisis faktor dan ujian kebolehppercayaan. Hasil analisis menunjukkan tiga skala komponen dikekalkan iaitu kesan ekonomi, pemuliharaan dan perlindungan, dan manfaat ekopelancongan dalam analisis. Pendek kata, kesan sosioekonomi dan alam sekitar adalah menggambarkan peluang yang baik untuk pembangunan ekonomi dalam industri ekopelancongan.

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Lastly, the author would like to express her gratefulness to her family that worthy to be acknowledge for their moral encouragement, cherished advised and apprehensions. Subsequently, the author thankfulness for financial assistance from Biasiswa Kerajaan Negeri Sabah (BKNS) and helped from the staff of faculty Economics and business. Thanks to all of friends that contributed and involved directly or indirectly helped the author in achieving the goals and target that has been designed.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

Ecotourism in the fields of tourism, conservation and rural development has become a buzzword nowadays. Therefore, assumption says that it achieves the objectives of conservation and development with the opening of the political and economic resources important to tourism as noted by Linberg, Enriquez and Sproule (1996).

In National Ecotourism plan defined ecotourism as “*environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features, both past and present), that promotes conservation, has a low visitors impacts, and provides for beneficially active socioeconomic involvement of local populations*” as noted by Chin (2010). There are four main elements of ecotourism for sustainable development included preventing damages as far as possible, low impact on the environment and local culture, the benefits for people at the area and unavoidable repairing for damages that occurs.

Malaysia is abundant with natural and cultural wonders. There is about 75% Malaysia forested land area and 60% are virgin rainforest in Malaysia which create Malaysia actively involved in ecotourism (Chin, 2010). Malaysia is no doubt inherently rich with natural and cultural assets that make ecotourism highly beneficial, feasible, sustainable and long-term forms of tourism. Malaysia wins best ecotourism destination for Travel Weekly (Asia) of Industry Awards, 2008 held in Singapore's and have win secondly in a row that Malaysia was honored. It is a significant

achievement for a country that prides itself for its natural attractions and layout of the unique geography. Malaysia is one from the twelve countries with mega biologically diverse in the world, which offering at least 15,000 species of flowering plants, 286 species mammals, 150,000 species of invertebrates and 4,000 species of fish in addition for many micro-organisms according to Tourism Malaysia media info (2008).

Ecotourism can contribute to both conservation and development that involves, as a minimum, a positive synergistic relationship between tourism, biodiversity and local people which supported by appropriate management as stated by Ross and Wall (1999). In ecotourism, community participation is related by nature on how groups and individuals empowered and have control over their lives. Then, there was existence for a variety of reasons for this noble organization and ecotourism. Most importantly, the communities will be affected by the project or decision, thus, naturally they should have an active role and influence in every level of decision making and planning (Bagul, 2009).

There are many benefits in term of economy and also creates commitment for conservation and sustainable development of local communities through ecotourism. However, the reality of local community participation is more complicated because there are lots of problems occur and need to be face. Since there had participation of local communities in ecotourism, ecotourism project success depends on the effort of community participation but there is always a question of the effectiveness of public participation in relation to whether effective or not?

In the light of discussing the nature of ecotourism through the plethora of studies, this study recognized the important linkages between tourism and the sustainable environmental or agriculture in a community-based system whereby in this

sense, this study focuses on Tagang system (TS) in Sarawak. This study will emphasize on the perception of local stakeholder on Tagang system development; and the socioeconomic and environmental impact of Tagang system which is located in Kg. Terbat Mawang, Sarawak.

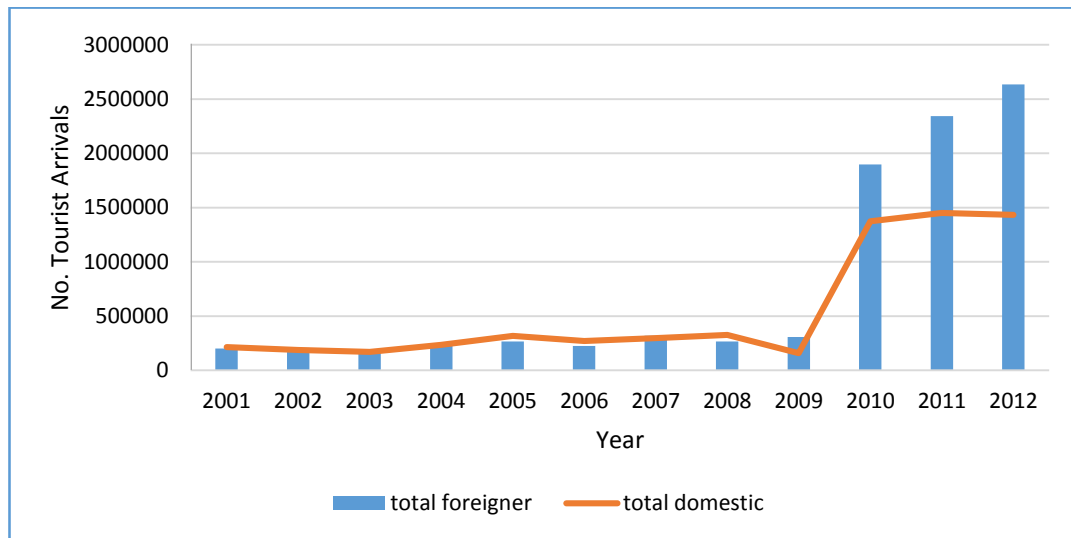
1.1 Background

1.1.1 Ecotourism and tourist

Firstly, the argument for the integration of tourism with conservation was made widespread by Budowski in 1976 in an article entitled ‘Tourism and conservation; conflict, coexistence or symbiosis’. Nevertheless, the term of ‘ecotourism’ can be traced only as far back on late 1980s. Wood (2002) wrote the definitions of ecotourism in his books, according to The International Ecotourism Society (TIES) which is previously known as The Ecotourism Society (TES) in 1991 which is produced one of the earliest definitions as quoted following;

“Ecotourism is responsible travel to natural areas that conserves the environment and sustains the wellbeing of local people.” (p. 9)

Figure 1.1: Tourist arrivals in Sarawak 2001-2012.



Sources: Official website of ministry of tourism Sarawak, (2013).

The foreigner and domestic tourist arrivals in Sarawak have been illustrated in Figure 1.1 from year 2001 till 2012. The tourist arrivals in Sarawak showed that the total numbers of foreigner tourists are increased steadily from year 2001 till 2009. Then, the number of tourist from foreigner increased sharply over the following year from 307,122 number of foreigner in 2009 to 2,634,715 in year 2012. In contrast, there is fluctuation number of domestic tourist arrivals from 2001 till 2008 and decreased slightly in 2009. Next, the number of domestic tourist arrivals in Sarawak increased sharply from 157,284 to 1,434,308 which are stood at 1,277,024. It can be concluded that, the total number of foreigner are remained significantly higher than the total number of domestic tourist arrivals in Sarawak from 2001 till 2012. From the figure above, it shows that the number of tourist increased dramatically in 2012, based on tourist arrivals that has been recorded, this will give high opportunity for tourism sector to gain high revenue contribute in economic growth.

1.1.2 Tagang system

Sabah is the first state founder of Tagang system in Malaysia that has adopted a traditional knowledge of indigenous peoples for the management of water and aquatic resources through the implementation of the Tagal system. In the early 90's, Fisheries Department has seen the potential that has been achieved from the implementation of Tagal system. Shortly, Fisheries Department has been recommended this system to Inland Fisheries and Aquaculture Enactment 2003. The implementation of this system has generated an idea to the government for applying the Tagal system also in other areas. The adaptation has created by government which can help to develop the Tagal system with centralized management structure through district committees and state committees.

Fisheries Department is also working with NGOs by providing training to build capacity in Tagal committee. Tagal system was implemented because the freshwater fish species are threatened with extinction. According to Pacos (2008) in 1960's, fish resources are not facing any extinction and pollution problems. However, as reported by year 1970s, the number of fish resources is decreasing in advance because of uncontrolled rampant fishing, logging and unacceptable fishing methods by using electric shock, fish bomb and chemicals that can cause the fishes to extinct.

Pacos (2008) noted that the implementation of Tagal system in Sabah has been made objectives as following;

1. To protect river environment from pollution.
2. To conserve and protect the fish resources from extinction.
3. To improve fish resource production as a main source of protein for rural people.

4. To control the use of uncontrollable fishing methods like fish bombing, electrocution and poisoning.
5. To carry out various activities in Tagal zone that could generate income for rural people, such as eco-tourism (snorkeling, fishing sport, etc.)

(Sources: Promote, Protect, Empower and Build Capacity of Indigenous Peoples, pg. 6-8)

Sarawak Agriculture Department (SAD) inland fisheries division reported that TS in Sarawak was adopted from Tagal system in Sabah. As reported in the BorneoPost Online on 25 September 2012, the implementation of TS is intended to nurture awareness of conservation and community commitment towards improving rivers for fish production and promote ecotourism. Additionally, it is also creates a sense of responsibility to prevent, control and reduce pollution of the rivers to sanctuary the nature for future generations as stated by Datu Ali Yusop, the chief executive officer of Sarawak Forestry Corporation (SFC).

In addition, chief executive officer, Datu Ali Yusop of SFC added as reported in BorneoPost Online that “Tagang System is actually a system of sustainable management of fisheries resources and in line with the objectives of the Sarawak Forestry Corporation in forest management and biodiversity resources sustainability”.

The implementation of Tagang system project is initiated in 2006 at Long Tuyo in Lawas, Sarawak with the Gazette under State Fisheries Ordinance 2003. In Sarawak, the concept of Tagang is a smart partnership between local community and government agency which is included Inland Fisheries Division (IFD), Agriculture Department in protection, rehabilitation and management of riverine fisheries resources in Sarawak. Tagang project applying the demarcation or zoning area for

rivers that has been selected for Tagang system. Demarcation area is divided into three parts of zoning as shown in Table 1.1 with three color which is red, green and yellow.

Table 1.1: Demarcation of rivers.

Red	Green	Yellow
Prohibited	Once every 2 years	Unrestricted

Sources: Authors' sources.

Zoning can be defined as ‘regulations that demarcate specific area for different types of land uses and the development standards to be applied within each land use zoning. Assumption stated that by using a flexible carrying capacity, degree of variation and fixed in a protected area was launched a space through zoning regulations (Weaver, 2008). The demarcation or zoning of rivers which is has been selected as Tagang projects are controlled under rule and regulations. This rules and regulations are executed from Sarawak Agriculture Department power to declare prohibited fishing zone.

The Minister may, acting on the advice of the State Fisheries Officer, by Order published in the Gazette, declare any area in riverine waters to be a prohibited fishing zone in order to:

- i. Save the population of any species of fish found in that zone from depletion or extinction; or
- ii. Prevent a habitat for any species of fish in, or the ecosystem of that area, from imminent destruction or irreparable damage; or
- iii. Prevent the spread of disease found in fish in that zone.

SAD highlight five objectives of TS comprises as follow to ensure the project will achieve a mission for the implementation;

- i. Protect and conserve a river system environment including the ecosystem of fisheries habitat and water bodies from destruction
- ii. Protect and rehabilitates the fisheries from depleting
- iii. To increase fish production as a source of protein for the local populate
- iv. To carry out various economic activities to generate income to the local community such as ecotourism and;
- v. To carry our R&D in selected Tagang areas.

SAD inland fisheries division has listed all the rivers that applied TS. There are 57 existing Tagang project till 2012 supplemented with 17 new developed project of Tagang in 2013. Entirely, the implementations of Tagang is 74 projects in Sarawak¹. For the whole of Tagang project, there are various approach on the rivers that selected for Tagang project comprises ecotourism as mainstream, followed by conservation and restocking approach. From all project Tagang that has listed, only seven rivers has been clasified had attain ecotourism which is consist of Sg. Tengoa, Sg. Kelapang, Sg. Tenyok, Nanga Stamang Ulu Engkari, Nanga Spaya Ulu Engkari, Sg. Kedup and Sg. Adis Singai located in Bau.

¹ For more details concerning the list of Tagang project and approach, see Appendix A.

1.1.3 The procedure implementation of Tagang system

Department of Agriculture Sarawak, Division of Inland Fisheries and Licensing Enforcement Unit elucidates more about the implementation Tagang system in Sarawak. In general, the representatives in place proposed Tagang system, or a survey of agricultural officers in the area. Once the area is identified, officials' agriculture will make a presentation or dialogue to the locals. Only after local residents agree, further formal application will be made to the department of agriculture. The consent of locals is very important because they will monitor the project, since the area is called as protected area that prohibited fishing in a particular place and require all residents to cooperate.

Table 1.2: Guide for the Tagang system aid

No.	Project type	Maximum grant value (RM)*	Minimum Qualifications
01.	Conservation of fishery resources	30,000	Has the project committee with a membership of at least 15 people.
02.	Addition of fish stocks	30,000	
03.	Eco-tourism and conservation of fishery resources	50,000	
04.	Assistance maintenance (For the 2nd year and 3rd)	3,000 / year	Project is still active

* The assistance is subject to the provisions and decisions ACTSP

The subject to review and approval by the Approval Committee of Tagang System Program (ACTSP) Sarawak Department Agriculture include development costs, operating costs, and the cost of repair or improvement projects as listed in Table 1.2 for the guide of Tagang system aid. The flow chart for Tagang project implementation was illustrated as shown in figure 1.2.