#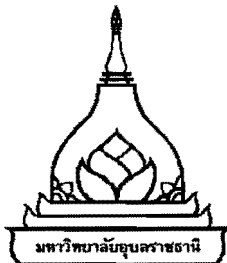 THE ROLE OF NON-GOVERNMENT ORGANIZATIONS IN ENVIRONMENTAL AWARENESS AND ECOTOURISM IN THE TONLE SAP GREAT LAKE, CAMBODIA: A CASE STUDY OF OSMOSE ORGANIZATION

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AWARENESS AND ECOTOURISM IN THE TONLE SAP GREAT LAKE,

CAMBODIA: A CASE STUDY OF OSMOSE ORGANIZATION

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ชื่อเรื่อง : บทบาทขององค์กรพัฒนาเอกชนต่อความตระหนักด้านสิ่งแวดล้อมและการ
ท่องเที่ยวเชิงนิเวศในโตนเลสาบ ประเทศกัมพูชา : กรณีศึกษา องค์กรออสโมส

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โตนเลสาบเป็นทรัพยากรที่มีคุณค่าสำหรับประชาชนชาวกัมพูชาและเป็นแหล่ง
ทรัพยากรเชิงนิเวศที่สำคัญของโลก เป็นเขตพื้นที่ชุ่มน้ำที่มีความอุดมสมบูรณ์ที่สุดในภูมิภาคเอเชีย
เป็นฐานทรัพยากรสำหรับเศรษฐกิจของประเทศ อีกทั้งเป็นรากฐานต่อการดำรงชีวิตของประชาชน
ในชนบทรวมถึงสิ่งมีชีวิตหลากหลายสายพันธุ์ การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อศึกษาถึงบทบาท
ขององค์กรออสโมสในการสร้างความตระหนักด้านสิ่งแวดล้อมให้กับนักท่องเที่ยวเพื่อส่งเสริมการ
ท่องเที่ยวอย่างยั่งยืนในโตนเลสาบ การศึกษาได้ทำการวิเคราะห์สื่อ ข้อความประชาสัมพันธ์ในสื่อ
ต่างๆ และกระบวนการของการส่งผ่านความรู้เกี่ยวกับการรักษาสิ่งแวดล้อมให้กับนักท่องเที่ยว โดย
ได้มีการศึกษาจากสื่อ ข้อความและกระบวนการที่มีประสิทธิภาพ

การศึกษาครั้งนี้ใช้วิธีการสัมภาษณ์แบบกึ่งโครงสร้าง (semi-structured) และแบบไม่มี
โครงสร้าง (unstructured) โดยได้ทำการสัมภาษณ์ผู้จัดการขององค์กรออสโมส ผู้ประสานงาน
เจ้าหน้าที่หน่วยงานราชการ จำนวน 3 คน นักท่องเที่ยว จำนวน 10 คน มัคคุเทศก์ จำนวน 2 คน
เจ้าหน้าที่อุทยาน 5 คน และชาวบ้าน จำนวน 3 คน นอกจากนี้ได้มีการศึกษาด้วยการสังเกต
พฤติกรรมโดยตรงของนักท่องเที่ยว และได้ทำการรวบรวมและวิเคราะห์ข้อมูลเอกสารเกี่ยวกับสื่อ
ข้อความประชาสัมพันธ์ และกระบวนการของการส่งผ่านความรู้ให้กับนักท่องเที่ยว รวมถึงได้
ทำการศึกษาทบทวนกฎหมายและระเบียบข้อบังคับทางราชการเกี่ยวกับการท่องเที่ยวเชิงนิเวศใน
ประเด็นที่เกี่ยวข้องกับกิจกรรมในโตนเลสาบขององค์กรออสโมส นอกจากนี้ยังได้รวบรวมข้อมูล
จากกระทรวงสิ่งแวดล้อม หน่วยงานการท่องเที่ยวส่วนจังหวัดและหน่วยงานด้านสิ่งแวดล้อมของ
จังหวัด ทำการวิเคราะห์ข้อมูลจากองค์กรออสโมส นักท่องเที่ยว มัคคุเทศก์ เจ้าหน้าที่อุทยาน

ชาวบ้านและเจ้าหน้าที่หน่วยงานราชการด้วยวิธีการวิเคราะห์เนื้อหา (content analysis) และวิธีการวิเคราะห์รูปสามเหลี่ยม (triangulation method)

      ผลการศึกษาบ่งชี้ว่าองค์กรออสโมสใช้สื่อการประชาสัมพันธ์ในหลายรูปแบบที่เกี่ยวกับพืชพันธุ์และสัตว์ในโตนเลสาบและให้รายละเอียดของการสนับสนุนนักท่องเที่ยวเพื่อการอนุรักษ์สิ่งแวดล้อม องค์กรออสโมสมีการเผยแพร่ข้อมูลข่าวสารให้กับนักท่องเที่ยวล่วงหน้าในช่วงและระหว่างการเดินทางท่องเที่ยว โดยในช่วงก่อนการเดินทางท่องเที่ยวมีการเผยแพร่ข้อมูลผ่าน สื่อประชาสัมพันธ์ทางอินเตอร์เน็ต หนังสือ นิตยสาร และแผ่นพับที่ส่งไปยังบริษัทท่องเที่ยวเพื่อเผยแพร่ให้กับนักท่องเที่ยว และในช่วงระหว่างการเดินทางท่องเที่ยวมีการเผยแพร่ข้อมูลฝ่ายมัคคุเทศก์ โปสเตอร์ เจ้าหน้าที่อุทยาน ชาวบ้าน การศึกษาพบว่าสื่อที่มีประสิทธิผลสูงสุด คือ มัคคุเทศก์ โปสเตอร์ และอินเตอร์เน็ต และข้อความที่มีประสิทธิผลแสดงเกี่ยวกับพืชพันธุ์และสัตว์ในโตนเลสาบ ทรัพยากรธรรมชาติโตนเลสาบ นกที่ใกล้สูญพันธุ์ การกำจัดขยะที่ถูกต้องในเขตโตนเลสาบ และการทำงานขององค์กรออสโมสมีความเหมาะสมสำหรับกลุ่มของนักท่องเที่ยวที่ถูกสัมภาษณ์ กระบวนการที่มีประสิทธิผลสูงสุดในการแพร่กระจายความรู้ด้านสิ่งแวดล้อมให้กับนักท่องเที่ยวคือการใช้กระบวนการทางอ้อมผ่านอินเตอร์เน็ตและสื่อสิ่งพิมพ์บางอย่างในระยะก่อนการเดินทางและกระบวนการโดยตรงของมัคคุเทศก์ โปสเตอร์และคู่มือนำเที่ยวในระหว่างการเดินทางท่องเที่ยว การศึกษานี้แสดงได้ว่าองค์กรออสโมสทำงานในการเผยแพร่ประชาสัมพันธ์เกี่ยวกับการอนุรักษ์สิ่งแวดล้อมให้กับนักท่องเที่ยวได้เป็นอย่างดีเป็นที่น่าเชื่อถือ อย่างไรก็ตามงานศึกษานี้มีข้อเสนอแนะว่าองค์กรออสโมส บริษัทที่นำเที่ยวบริเวณโตนเลสาบ หน่วยงานราชการที่เกี่ยวข้องและประชาชนในท้องถิ่นควรร่วมมือกันในการเผยแพร่ความรู้เกี่ยวกับการอนุรักษ์สิ่งแวดล้อมให้กับนักท่องเที่ยวในประเด็นความสนใจเกี่ยวกับการดำรงอยู่ของโตนเลสาบเพื่อสืบทอดสำหรับคนรุ่นหลังต่อไปในอนาคต

ABSTRACT

TITLE : THE ROLE OF NON-GOVERNMENT ORGANIZATIONS IN
ENVIRONMENTAL AWARENESS AND ECOTOURISM IN THE TONLE
SAP GREAT LAKE, CAMBODIA: A CASE STUDY OF OSMOSE
ORGANIZATION

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KEYWORDS : ENVIRONMENTAL AWARENESS / ECOTOURISM / THE TONLE SAP
GREAT LAKE

The Tonle Sap Great Lake is a valuable resource for the people of Cambodia and is a
globally significant ecological site. It is the most productive wetland area in Asia, providing a
resource base for the country's economy and rural livelihoods as well as habitats for large
numbers of wildlife species. This study aimed to investigate the transmission of environmental
awareness to tourists by a non-government organization, Osmose, to promote sustainable tourism
in the Tonle Sap Great Lake. The study analyzed media, the messages in each media, and the
processes of transmission of knowledge about protection of the environment to tourists and
investigated the effective media, messages, and processes.

The methodology of this study included semi-structured and unstructured interviews
with the Osmose Manager, Coordinator, three government officers, ten tourists, two tour guides,
five park rangers, and three villagers. Direct observations of tourists' behavior were completed
and documents about the media, messages, and processes of the transmission of knowledge to
tourists collected and analyzed. Government laws and regulations related to ecotourism were
reviewed in relation to the activities of Osmose in the Tonle Sap Great Lake. Information from
the Ministry of Environment, Provincial Department of Tourism, and Provincial Department of
Environment was also gathered. Data from Osmose, tourists, tour guides, park rangers, villagers,

and government officers from different departments were analyzed by content analysis and triangulation method.

Results indicated that Osmose used many kinds of media about flora and fauna of the lake and details of tourists' contribution to environmental conservation. Osmose spread information before the trip to tourists by posting information on the Internet and distributing books, magazines, and leaflets to tour companies for dissemination to potential tourists. In addition, Osmose spread information during the trip to tourists by using tour guides, posters, park rangers, and villagers. It was found that the most effective media and messages were tour guides, posters, and the Internet, and that the messages about flora and fauna of the lake, the Tonle Sap Great Lake natural resources, endangered birds, correct disposal of rubbish in the lake area, and the work of Osmose were appropriate for the group of tourists interviewed. The most effective processes of spreading environmental knowledge to tourists were the use of the indirect processes of the Internet and some publications in the pre-trip phase and the direct processes of tour guides, posters, and guidebooks during the trip. The study found that Osmose served a creditable function in the distribution of messages about environmental conservation to tourists. However, it is suggested that the organization, tour companies that bring to tourists to the lake area, related government organizations, and local people should cooperate in the spread of environmental conservation knowledge to tourists in the interests of the survival of the Tonle Sap Great Lake for future generations.

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ACRONYMS AND ABBREVIATIONS

ADB	:	Asian Development Bank
ASEAN	:	Association of Southeast Asian Nations
ERS	:	Environmental Research Station
GO	:	Government Organizations
ISBR	:	The Tonle Sap Biosphere Reserve
IUCN	:	International Union for Conservation of Nature and Natural Resources (The World Conservation Union)
IT	:	Information Technology
MoT	:	Ministry of Tourism
MoE	:	Ministry of Environment
MoAFF	:	Ministry of Agriculture Forestry and Fisheries
NGO	:	Non-Government Organizations
PDoT	:	Provincial Department of Tourism
PDoE	:	Provincial Department of Environment
TIES	:	The International Ecotourism Society
TSGL	:	The Tonle Sap Great Lake (called "The Tonle Sap")
UNDP	:	United Nations Development Program
UNESCO	:	United Nations Educational, Scientific and Cultural Organization
UNWTO	:	United Nations World Tourism Organization
WCS	:	Wildlife Conservation Society

CHAPTER 1

INTRODUCTION

Environmental awareness is disseminated in Cambodia by different departments such as the Tourism Department, and ecotourism has been promoted recently as it plays an important role in sustaining the nation's natural resource for future generations. This research investigated the environmental awareness and ecotourism activities of a non-government organization (NGO) in Cambodia.

This section discusses the growth of tourism and the economy of the Kingdom of Cambodia, the ecological impact on water-birds, and environmental problems in the Tonle Sap Great Lake (TSGL). The section also provides information about the geography of the study area, Osmose, the selected organization, problem statement, research questions, research objectives, and thesis organization.

1.1 Rationale of Study

Over the past six decades, tourism has experienced continual growth and diversification to become one of the largest and fastest growth economic sectors in the world (UNWTO, 2008). *Ecotourism* is the fastest growing sector of the tourism industry.

In Cambodia, the Ministry of Tourism (MoT) recognized tourism and ecotourism as a high priority source of economic benefit, playing an important role in promoting the national economy, employment opportunities, residents' incomes, and reducing poverty. Tourism in Cambodia is supported by the national government and is based on culture and nature. Since 2004, the number of foreign tourist arrivals in Cambodia has increased annually (see Table 1-1: 2), especially in the four main tourist destinations of Siem Reap province, Phnom Penh, beach destinations, and ecotourism destinations in the north-east, south-west, and the TSGL. For example, in 2005 Cambodia had 1,421,615 foreign tourists, a 34.72% increase over 2004. In 2008, the number of tourists increased by 5.48% compared to 2007. Income from tourism

increased from 578 million US$ in 2004 to 1400 million US$ in 2007 and generated 15% of the Gross Domestic Product (GDP) (Khon, 2008).

Table 1-1 Numbers of Foreign Visitor Arrival in Cambodia (Sopheareak, K. and Vanny, H. , 2009)

Year	Visitor Arrivals	
	Number	% change compared to previous year
2004	1,055,202	50.53%
2005	1,421,615	34.72%
2006	1,700,041	19.59%
2007	2,015,128	18.53%
2008	2,125,465	5.48%
2009	2,161,577	1.70%

Based on the increasing numbers of tourists, MoT predicted that in 2010 there would be 3.2 million foreign visitors to Cambodia (see Table 1-2).

Table 1-2 MoT Predictions of Foreign Visitors to Cambodia and Income Generated (Khon, 2008)

Year	Numbers of Visitors (million)	Income (Million US$)
2010	3.2	2,170
2012	4.1	2,600
2015	5	3,200

According to a statement of the Minister of Tourism, His Excellency Thong Khon, although visitors and income from foreign tourists have increased significantly, there is no guarantee that tourism has been developed correctly and sustainably and large numbers of tourists

should not be allowed to have negative effects on the environment, culture, and society (Khon, 2008). The increasing number of tourists can be related to many factors, such as various kinds and combinations of package tours, friendly and helpful tour guides, well-managed tourist sites, and many interesting tourist attractions. The TSGL is one of the most attractive destinations in Cambodia and is well-known for its biodiversity in the flooded forests. Every year, this area attracts many tourists, especially international tourists. For instance, the National Institute of Statistics stated that:

in 2002, 110,000 tourists visited Chong Khneas[1] for trips on the lake. This village is a port and a place that tourists can reach first when they leave for the Prek Toal Core Area, the TSGL from Siem Reap town (see Figure 1-1). It is estimated that there will be 534,100 tourists by 2018. (National Institute of Statistics, 2008)
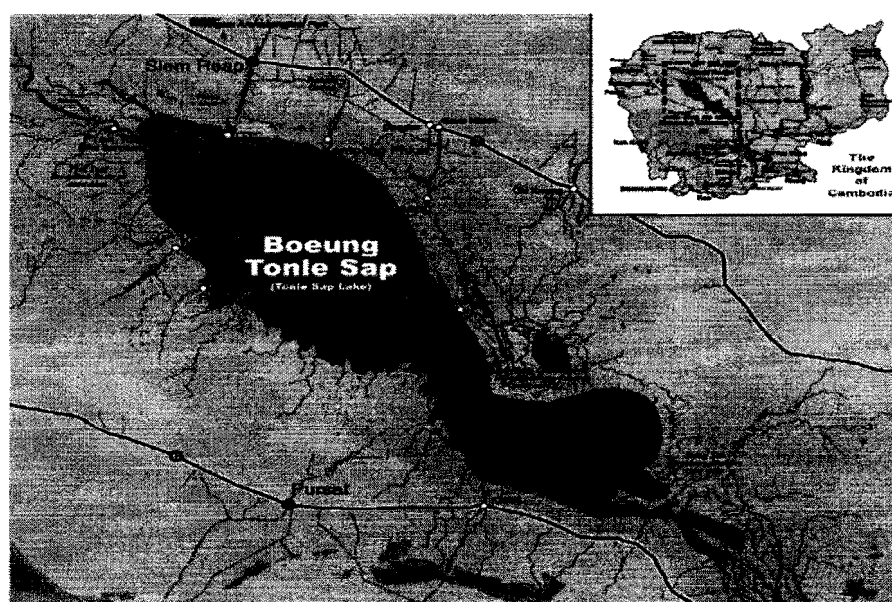
Figure 1-1 The TSGL Map

In addition, Thoeun, Director of the Boat Tourism Association in Chong Khneas, told a newspaper in "Asia Finest.com" that there were 1,410 tourists per day visiting the TSGL (Rith, 2008). The high number of visitors to the TSGL causes many ecosystem and biodiversity

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[1] Chong Khneas is the floating village built on the TSGL. Most tour companies operate from there.

problems involving waste disposal, water pollution, and threatened resources. The hydropower constructions in the Upper Mekong River have an impact on the hydrology and flooding, especially in the Lower Mekong basin, causing changes in the natural processes and affecting fisheries and many different species of plants and animals in the TSGL. They also impact on the water quantity and quality of the Mekong, and consequently of the TSGL (Bonheur, 2003; Kummu et al., 2005; Campbell, I.C. et al., 2006; Varis et al., 2006; Osmose, 2008; Wang and Tong, 2009).

According to Bonheur (2003), a permanent Deputy Director of TSBR[2], millions of visitors come to see the TSGL each year. While ecotourism can bring additional income to the local and national economy there is a general concern among government organizations (GO) and NGO over the long-term sustainability of the area. Bonheur's study also stressed that there are several issues in the Prek Toal Core Area, the ecological impact on water-birds due to disturbances caused by the high frequency of visits, inappropriate viewing distances, numbers and locations of viewing towers to watch the birds, modes of transport, and zoning for restricted use. Deforestation and over-exploitation of fishery resources and indigenous wildlife are also key problems in this area. Water pollution is a result of local people's settlements on the lake, waste disposal, and oil spilled from boat engines involved in the tourism and other industries (Bonheur, 2003; Jin et al., 2005; Serrat, 2005; ADB Loan, 2007; Osmose, 2008; Meinander, 2009).

The problems mentioned above have caused deterioration in the state of the TSGL. Development and conservation of the area have been organized by various institutions, such as the Mekong River Commission, United Nations (UN) agencies, Asian Development Bank (ADB), the Great Mekong Sub-region program, the Association of Southeast Asian Nations (ASEAN), and many donor countries. These institutions aim to maintain the lake as a tourist site beneficial to all stakeholders, especially local residents (Varis et al., 2006). One institution involved in the development and conservation of the TSGL is Osmose. This study examined the work of Osmose and the manner in which environmental awareness was transmitted to tourists to achieve sustainable tourism in the TSGL.

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[2] TSBRS :The institution of the Tonle Sap Biosphere Reserve

1.2 Geography of the TSGL

Cambodia is situated in South-East Asia, in the southwestern part of the Indo-Chinese Peninsula and covers an area of 181,035 square kilometers. The country is surrounded by the Cardeman Mountains, a reserve rich in biodiversity, in the west, the Dangrek Mountains in the north, and hilly plateaus in the east, with a huge flood plain called the TSGL in the central part of the country (Matsui et al., 2002).

The TSGL, sometimes called the *Tonle Sap* and in the Khmer language *Boeung Tonle Sap*, is the heart of Cambodia. It was initially formed as a lake 20,000 years ago (Osmose, 2008). However, Bonheur (2003: 5) cited Shinji (1998) and suggested that it originated about 5,000 years ago when it connected with the Mekong River. Shinji added that its annual hydrological flood cycle and rich fisheries resources make it unique. The TSGL served as the foundation of the Great Angkor Empire some 1,000 years ago and it continues today to support the development of Cambodia. The lake's area increases from 2,500 square kilometers to 9,500 kilometers in the wet season, acting as a natural drought and flood mitigation mechanism. It is connected to the Mekong River via the 120 kilometers long Tonle Sap River. Each year, as the water level of the Mekong River rises in early June, the Tonle Sap River backs up and its flow reverses into the lake (see purple arrow in Figure 1-2: 6). In four months, the lake increases its depth by eight to nine meters and expands its surface area to well over a million hectares flooding an extensive forest area (green color in Figure 1-2 shows the flooding area). This flooded area serves as a prime fish habitat (Osmose, 2008). With the rising water come millions of migrating fish that provide sustenance and livelihoods to numerous communities surrounding the TSGL.

The TSGL is one of the world's top freshwater fisheries (300,000 tons annual catch) (Renaud, 2003; Set Kao et al., 2008; Asian Trails et al., n.d). In October, the lake reaches its maximum depth of six to nine meters and then the flow of the river reverses and the lake starts to drain (see yellow arrow in Figure 1-2). This draining continues until the level in the Mekong River rises again in June the following year and the cycle re-commences.

The TSGL shelters the most important water-bird colonies of the region and supports the world's largest snake harvest (five million per year), mostly reared as snacks for farm crocodiles. Three million Cambodians directly depend upon the lake's resources as fish provide 70 percent of their protein intake. Because of its importance, His Majesty the King Norodom

Sihanouk requested the inclusion of the TSGL on the list of world heritage sites in October 1992 (Matsμi et al., 2002). United Nations Educational, Scientific and Cultural Organization (UNESCO) registered it on the list of Biosphere Reserves in 1997 in view of its exceptional ecological, economic, social and cultural value (Osmose, 2008). The Tonle Sap Biodiversity Reserve was established by royal decree in 2001.
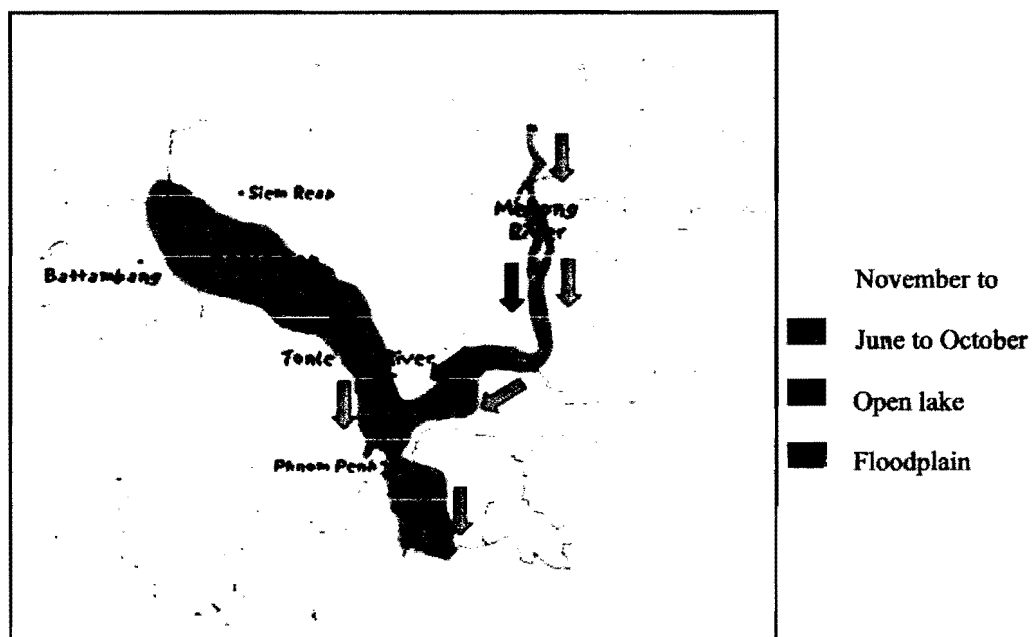
Figure 1-2 Map of Water Flow (Osmose, 2009)

There are three villages, Prek Toal, Kbal Taol, and Peak Kantel (see Figure 1-3: 7) under the control of Osmose organization for ecotourism (Osmose, 2008). The Prek Toal bird sanctuary, which attracts many tourists to see its water-birds, is in the core zone of the Tonle Sap Biosphere Reserve (Bonheur, 2003: 17).
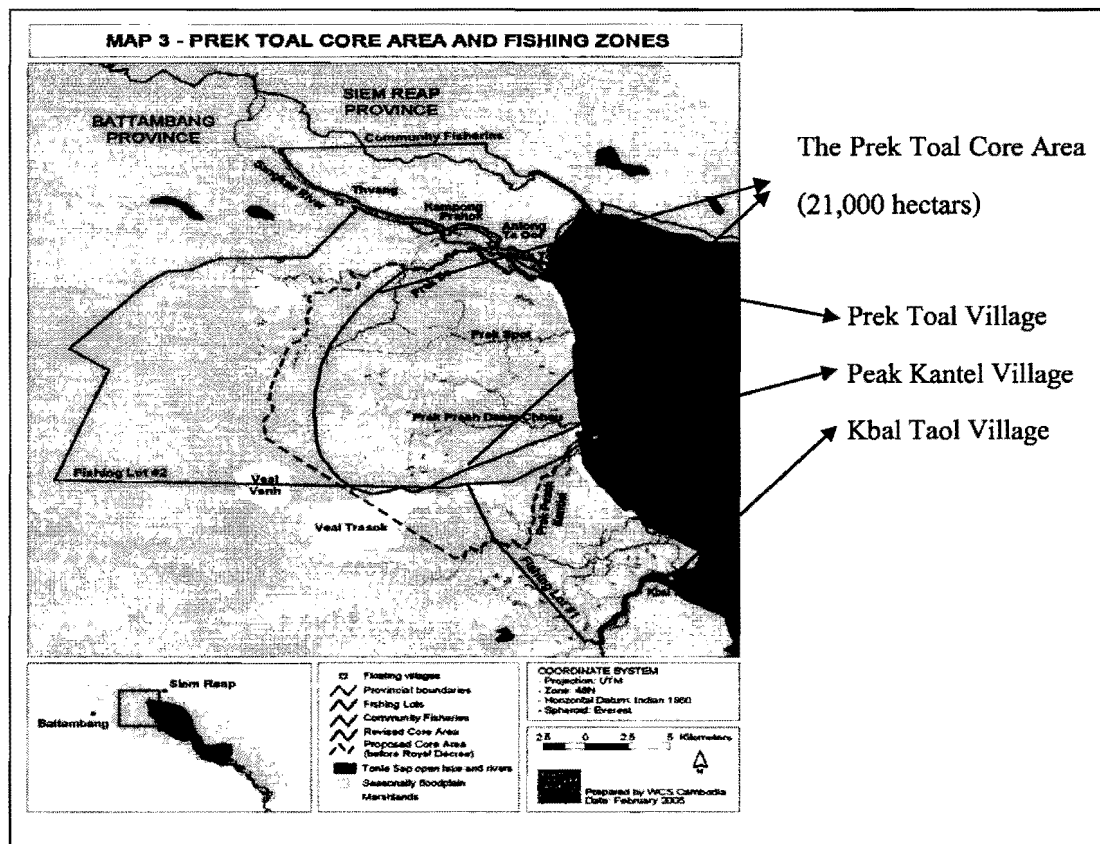
Figure 1-3 Site Map (Osmose, 2009)

1.3 Reasons for the Selection of Osmose

Osmose runs ecotourism activities to help in the preservation of the natural and human habitats in the TSGL. Other organizations work in this unique place (see Table 1-3: 8) but Osmose was selected for this study as it was is a local not-for-profit organization and any money made from its operations was allocated to village development activities and the raising of environmental awareness in education programs in the floating villages. As shown in Osmose's leaflet, the 80.00 USD$ that the organization received from one visitor was distributed among a number of different places (see Table 1-4: 9). Swarbrooke (1999) and UNWTO (2004) regarded this benefit-sharing with the host community as a basic feature of sustainable tourism.

The characteristics of focusing on ecotourism, not working for profit, sharing benefits with related people, and promoting environmental education were the determinants in the selection of Osmose as the focus of this research.

Table 1-3 Name of Tour Operators and Activities in the TSGL (Bonheur, 2003)

Name	Type	Activities
1. Osmose organization	Community development and tour operator	Not-for-profit organization: environmental conservation – environmental education – ecotourism – local development – profit allocation to related stakeholders
2. Apsara Tour	Tour operator	Profit-organization: nature tourism activities as part of longer tours - can organize separately for interested visitors
3. Asian Trails	Tour operator	(Same activities)
4. Diethelm Travel	Tour operator	(Same activities)
5. Terre Cambodge	Tour operator	Profit-organization: operator specializing in nature tourism and adventure-travel
6. Tonle Sap Biosphere Reserve Secretariat	Government organization	Not-for-profit organization: facilitating, coordinating and strengthening the communication and cooperation among relevant agencies in promoting sustainable management. The organization only works in the area of environmental management in the TSGL and does not arrange package tours.
7. Wildlife Conservation Society Cambodia Program (WCS)	Community development	Not-for-profit organization: works with the local people in Prek Toal Core Area to protect the nests of large water-birds. Trains members of the villages as conservation rangers. The organization does not work in the area of tourism.

Table 1-4 Profit Allocation (80$/person/day) (Osmose 2009)

Distribution of entrance fee	Amount
Entrance fee to the bird sanctuary (used for conservation)	25.00 USD$
Transport, food, certificated guide	23.00 USD$
Direct income for the villagers (paddle boats, village tours, cooking, home-stays, handicraft)	8.00 USD$
Income for Osmose projects (for environmental education and local development programs)	24.00 USD$
Total :	80.00 USD$

1.4 Problem Statement

The TSGL is accessible by boat from six popular tourist sites, Phnom Penh capital city, Siem Reap, Battambang, Kompong Chnang, Kompong Thom, and Pursat Province. These sites can help the TSGL in becoming a unique ecotourism destination. Of the 23 protected areas in Cambodia, the TSGL is the one that benefits directly or indirectly half of the country's population and is the most attractive place for nature-based tourism/ecotourism (Bonheur, 2003: 5 and 17). At the same time, the TSGL also has a number of biodiversity problems caused by three different factors.

Firstly, dam construction in the Upper Mekong impacts on the ecosystem and biodiversity regarding fisheries and many different species of plants and animals in the TSGL. The threats from the dams are related to the importance of dynamic flows and changes of water flow may affect flood pulses, flood triggers, and timings of floods. Flood durations, arrival times, oxygen levels, sedimentation, and water quality are also affected by the construction projects on the Mekong (Kummu et al., 2005; Campbell, I.C. et al., 2006; Varis et al., 2006; Osmose, 2008).

Secondly, natural resources have been depleted by over-exploitation. The local people's livelihoods in the TSGL are based on fisheries, labor, trade, agriculture, aquaculture, farming animals, home gardens, and domestic duties, all depending heavily on natural resources. All species have been threatened by the increase in the human population through water pollution, waste disposal, over-exploitation of birds and fishes, and deforestation to the extent that the

livelihoods of the floating villages are threatened and cannot be sustained (Marko, 2003; Campbell, I.C. et al., 2006; Varis et al., 2006; Meinander, 2009).

Finally, Bonheur (2003) highlighted the effects of tourism and other businesses on the lake's biological structure through high frequencies of visits, inappropriate bird viewing distances, boat engines, high numbers and locations of bird-watching towers, and modes of transport.

Some existing research inside and outside the TSGL has focused on environmental conservation for sustainable tourism. This includes studies about ecotourism management by assessment of the impact of ecotourism on water-bird ecology, ecotourism potential, environmental management of community participation, importance of community participation, analysis of livelihood sustainability, socio-economics, species diversity and ecology, environmental education of local people, richness of nature resources, impacts of the Mekong developments, dynamics and development of the lake's unusual hydraulic relationship with the Mekong River, and environmental impacts of adventure tourists. However, none of these studies has addressed the transmission of environmental awareness through activities to tourists for ecotourism purposes.

The study aimed to examine this transmission by Osmose and was encouraged and supported by Mr. Aing Sopharith (Chhai), a former tour coordinator, who has a concern about the responsibility of tourists and acted as a key informant for the study.

1.5 Research Questions

To address the problem statement, the study sought to answer two research questions:

1.5.1 How is environmental awareness transmitted to tourists by Osmose's activities to promote sustainable tourism in the TSGL?

1.5.2 What are the effective media, messages and processes?

1.6 Research Objectives

The study had three objectives to answer the above research questions:

1.6.1 To identify the types of media and the messages used in each media of Osmose

1.6.2 To explore the processes of Osmose in the transmission of knowledge of protecting the environment to tourists

1.6.3 To investigate tourists' perceptions of the effective media, knowledge types (messages) and processes as means to enable tourists' environmental awareness.

1.7 Thesis Organization

This thesis is organized into five chapters (seen Figure 1-4: 13). The following section indicates the structure of each chapter.

Chapter 1 presents the rationale of the study, geography of the study area, reasons for the selection of Osmose, problem statement, research questions, research objectives, and thesis organization.

Chapter 2 reviews the literature related to the topic in the area of ecotourism and environmental awareness, related laws of the Kingdom of Cambodian, and findings about environmental transmission and ecotourism in existing related studies. This chapter mentions in detail the definitions of keywords in the study in the area of sustainable tourism, responsible tourism, ecotourism, environmental, and awareness. Marketing concepts, related laws, Osmose's history and organizational structure, and related research are discussed. The conceptual framework of the study is also outlined.

Chapter 3 describes the methodology adopted to complete the study. It discusses the choice of the qualitative approach, research design, area of the study, population and sample selection, research instruments, data sources and data collection methods, data analysis, validity and reliability of data, scope of the study, and expected outcomes.

Chapter 4 presents the major findings of the study based on documents, semi-structured interviews with Osmose's Manager and Coordinator, and group and individual semi-structured interviews with tourists, tour guides, park rangers, and villagers. Observations of tourists' behavior were also carried out. This chapter includes a description of the overview of the TSGL, Osmose's projects, ecotourism projects, and profiles of the respondents. Existing media, media used during the tourists' visits, and processes of transmitting environmental knowledge are also illustrated. In addition, the perceptions of Osmose, tourists, tour guides, park rangers, and

villagers of effective media, messages, and processes are mentioned. Their recommendations are also presented.

Chapter 5 presents the aim and discussion related to the study. It discusses the overall results and compares them to concepts of ecotourism, previous studies, and laws and regulations of the Kingdome of Cambodia. The benefits and limitations of the study are raised. Recommendations are suggested from the respondents and from the researcher to Osmose and to Ministry of Tourism, Ministry of Environment, Provincial Department of Tourism, Provincial Department of Environment in Battambang and Siem Reap Province, and the Core Area Management Centre. Finally, ideas for future research are presented.
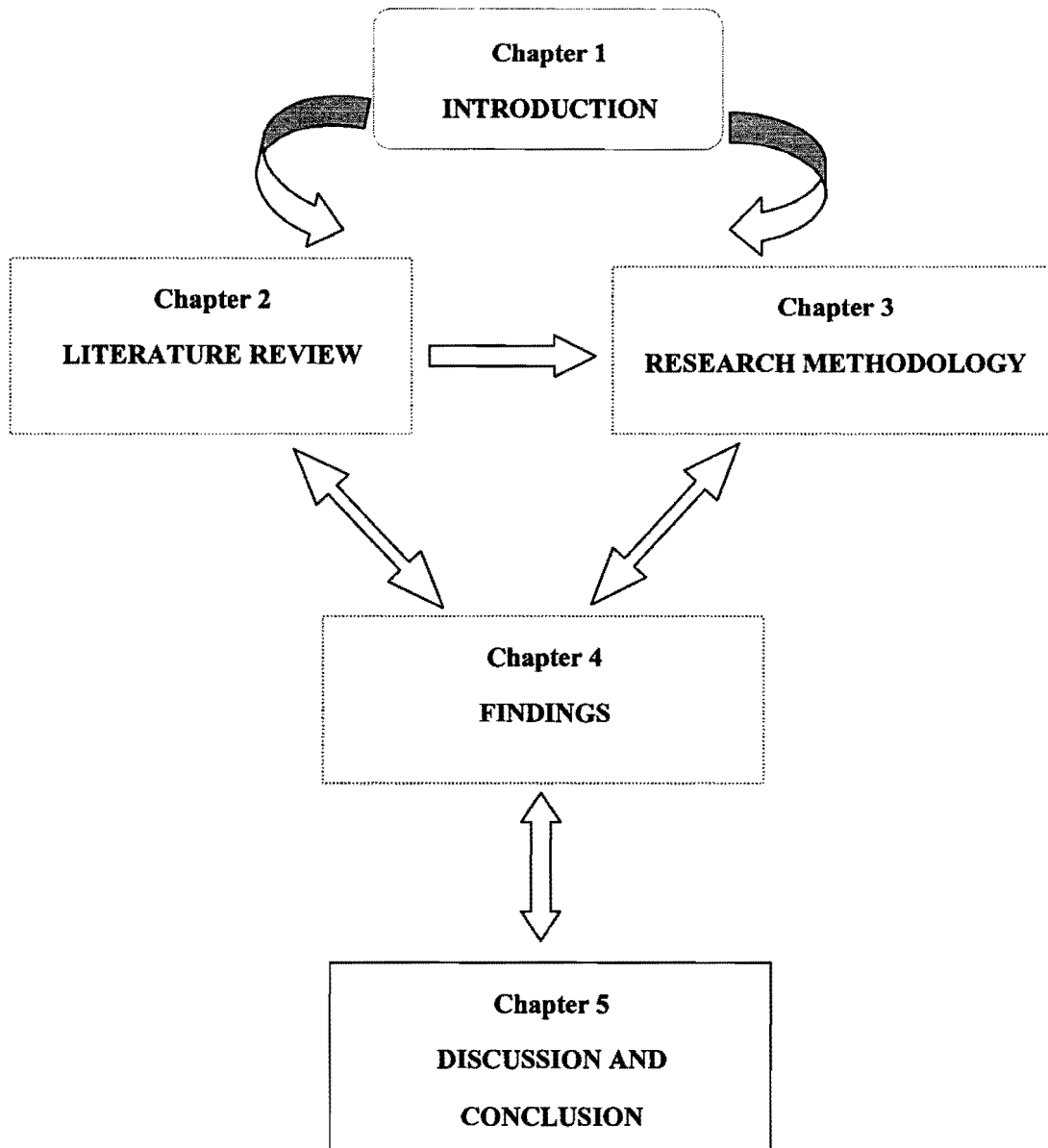
Figure 1-4 Thesis Organization

CHAPTER 2

LITERATURE REVIEW

A review of related literature from a variety of sources is divided into four parts. The first part presents definitions of relevant terms and explanations and discussions of relevant concepts. The second part focuses on related laws in Cambodia to do with tourism, environment, agriculture, forestry, and fisheries. The third deals with the Osmose organization. The last part aims to ground the study in a wider perspective of knowledge. This is achieved by the examination of other studies relating to management and conservation of water-birds in the Prek Toal Core Area, sustainable and nature-based tourism, alternative livelihoods in the floating villages, benefits of environmental management, ecotourism and environmental education, community participation in environmental management of tourism, and environmental impact of adventure tourist. The conceptual framework relating to the main idea of the study is also explained.

2.1 Sustainable Tourism

2.1.1 What is "Ecotourism"?

The term *ecotourism* started being used around 1975 and became popular in 1980. More recently, it has been replaced by other terms, such as "sustainable tourism, responsible tourism and total tourism" (Zadok, 2007). *Ecotourism* has proved to be difficult to define because of the many varying definitions (Fennell, 1999). To date, there has not been agreement about a final definition among scholars, different people tending to define it in terms of what is beneficial to them. Zadok (2007) stated that most definitions of *ecotourism* relate to a special form of tourism that meets three win-win-win criteria that:

(1) takes into account environmental conservation

(2) includes meaningful community participation

(3) is profitable and can sustain itself.
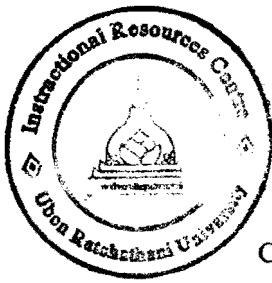
Ceballos is generally accepted as the first person to define ecotourism (also known as ecological tourism) (Fennell, 1999; Honey, 1999; TIES, Eotourism Definition, 2005; Ceballos, 1996). This definition stated that ecotourism is:

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 low negative visitor impact and provides for beneficially active socio-economic involvement of local populations (Ceballos, 1996).

The Ministry of Tourism (MoT) in Cambodia offered a definition of ecotourism as "a form of nature-based tourism that aims to conserve natural environment and local cultures and enhance the livelihoods of Cambodian people as well as visitors' experience" (Ministry of Tourism Cambodia, n.d).

Many definitions of *ecotourism* exist, but in its broadest sense, it is the way of traveling that has a low impact on the environment, builds environmental awareness, conserves and does not disturb nature, provides benefits for local residents, creates economic profit for the local environment, and promotes tourist education.

2.1.2 What is "Sustainable Tourism"?

There is no widely accepted definition of *sustainable tourism*, with many researchers offering similar definitions, such as Jafari (1996), Swarbrooke (1999), TIES (2005), and Weaver (2006). The definition of Swarbrooke (1999) stated that, "Sustainable tourism is economically viable but does not destroy the resources on which the future of tourism will depend, notably the physical environment and the social fabric of the host community" (p. 12).

United Nations World Tourism Organization (UNWTO) described sustainable tourism as based on environmental, economic, and socio-cultural aspects. One of these is, "Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity" (UNWTO, n.d).

The Ministry of Tourism stated that sustainable tourism was, "the type of tourism development which responds to the present needs and without compromising the needs of the next generation" (Ministry of Tourism Cambodia, n.d).

In conclusion, sustainable tourism is the minimization of negative impacts, conservation of resources to maintain the long term viabilty and a fair economic return, and the meeting of the needs of the present without compromising the ability of future generations.

2.1.3 Sustainable Tourism Concepts

Based on the definition of Fennel (1999), ecotourism is a sustainable form of natural resource-based tourism. By the early 1990s, the term sustainable tourism began to be used by academics and practitioners, emerging from an idea of "sustainable development" (Weaver, 2006). It is well-documented that sustainable development in any sector, including tourism, is based on the interrelationships between and the integration of three constituent factors: environmental protection, economic feasibility, and social equity (Swarbrooke, 1999; UNWTO, 2004) (see Figure 2-1). It should also maintain a high level of tourist satisfaction and ensure a meaningful experience to tourists, raise their awareness about sustainability issues, and promote sustainable tourism practices amongst them (UNWTO, 2004).

Economic

Efficiency

Economic sustainable of tourism

Sustainable tourist development

SUSTAINABILITY

Tourism as part of

Ecologically sustainable tourist

sustainable development

Social Equity

Environmental

Conservation
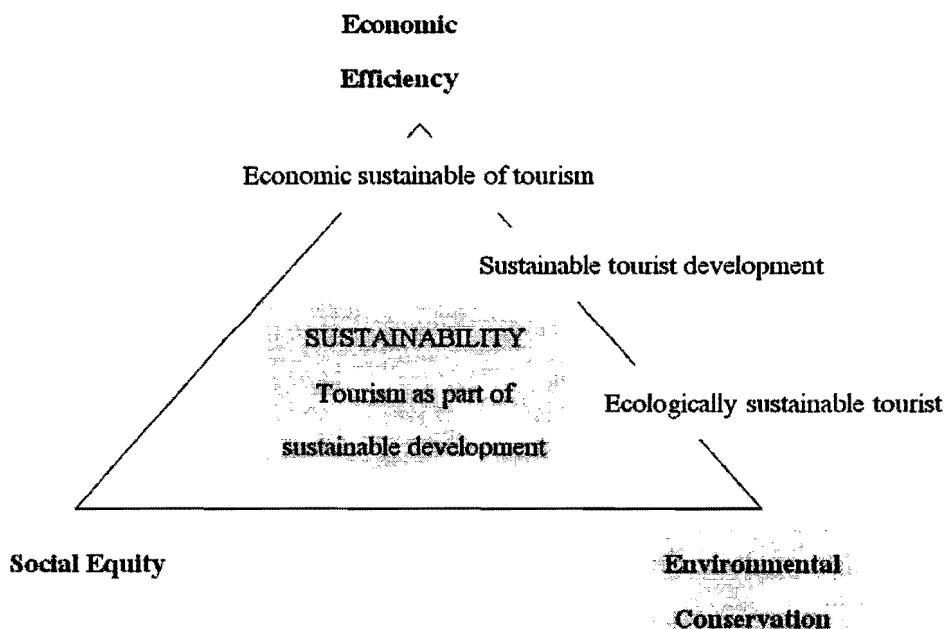
Figure 2-1 Sustainable Tourism Factors (Swarbrooke, 1999: 83)

Ecotourism activities have different effects on the three sustainable tourism factors, negative in regards to environmental impacts, positive for economic matters, and a combination of both for the social impacts Sustainable development requires participation from many other sectors, including public, industrial, volunteer, host community, media, and tourists,

and needs clear, responsible tasks and working processes for all stakeholders (Swarbrooke, 1999). There also needs to be consideration of the questions: Who is responsible for these factors? What should these people do? Why is it important to have responsible people? Who gets the benefit from sustainable tourism?

It is possible to identify five components of sustainable tourism by drawing on the ideas of Swarbrooke (1999), Srinivas (n.d), and UNWTO (2004). These ideas:

(1) make optimal use of environmental resources

(2) respect the socio-cultural authenticity of host communities

(3) provide fair socio-economic benefits to all stakeholders

(4) inform participation of all relevant stakeholders, as well as strong political leadership

(5) maintain a high level of tourist satisfaction and ensure a meaningful experience, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them.

To these, World Tourism Organization (WTO) added:

(1) support for the integrity of the area

(2) no abuse of the product

(3) effort to achieve quality, not quantity.

The International Ecotourism Society (TIES), a leading NGO working in the area of ecotourism, set principles that:

(1) minimize impact

(2) build environmental and cultural awareness and respect

(3) provide positive experiences for both visitors and hosts

(4) provide direct financial benefits for conservation

(5) provide financial benefits and empowerment for local people

(6) raise sensitivity to host countries' political, environmental and social climate (TIES, 2009)

Based on Swarbrooke (1999: 83), sustainable tourism development is about maximizing the positive impacts and minimizing the negative ones. These processes are for the benefit of the area's residents as well as for the tourists (Kotler et al., 2006). Swarbrooke stated

that, "sustainable tourism requires pro-active initiative rather than just re-acting to a problem" (1999: 213). It involves the development of new products and destinations in sustainable ways and sustaining existing products and destinations given the investment of resources, emphasizing conservation and change management rather than preservation and fossilization. It should seek to ensure that tourism operates in line with the concept of limits to acceptable change. The focus of sustainable tourism is to be on well-educated, high-spending, long-stay tourists, not the frequency of tourism or mass tourists (Swarbrooke, 1999; Weaver, 2006). Hence, de-marketing strategy that deals with discouraging certain customers in a temporary or permanent way should be practiced (Weaver, 2006).

Good management is important, as pointed out by Swarbrooke: "Ecotourism can be a sustainable form of tourism, if properly managed" (1999: 323). Participative planning mechanisms, in which communities define and regulate the use of their area, are needed and visitors have to take responsibility for the sustainability of their destinations, and hence the global environment, through their travel choices, behavior, and activities. Companies must formulate and implement regulations for sustainability with a view to applying them in each part of the operation (UNEP and WTO, 2002; Hari, n.d).

Wight (1993) cited in Swarbrooke (1999: 323) identified nine principles that underpin ecotourism, but only three are heighted here. These are:

(1) it should involve education among all parties – local communities, GO, NGO, industries, and tourists before, during, and after the trip

(2) it should promote moral and ethical responsibility and behavior towards the natural and cultural environment, by all participants

(3) Ecotourism operations should ensure that the underlying ethics of responsible environmental practices are applied not only to the external of natural and cultural resources that attract the tourists but also to their internal operations.

Overall, sustainable tourism/ecotourism must have relationships among three factors: economic, social, and environmental factors. It should be pro-active rather than re-active to problems and not only implement existing products in a sustainable way but also develop ideas for future sustainability. At the same time, sustainable ecotourism should educate all people to take responsibility for nature and ensure that it is passed on to future generations.

2.2 Responsible Tourism Concepts

Ecotourism is a type of sustainable and responsible tourism based on ecological principles and sustainable development theory (Wang and Tong, 2009). As indicated by Swarbrooke (1999: 142) this responsibility is far-reaching: "In every aspect of our life we have a responsibility to ourselves, our friends and family, our work colleagues and society as whole".

Tourism cannot be solely developed by a ministry or governmental agency of tourism or by the National Parks department as it crosses many sectors. There is a need for strong inter-agency cooperation among stakeholders (Swarbrooke, 1999). Ecotourism needs cooperation between government, parks, NGO, local communities, tour operators, tour guides, and tourists (Volker, 2006).

Every stakeholder should be responsible. Volker (2006) mentioned that "responsible travelers" should minimize negative impacts on environment, contribute to the conservation of biodiversity and consume the lowest possible amount of non-renewable resources. Some of the damage caused to the environment by tourism is unavoidable (Swarbrooke, 1999: 55), but tourists must minimize the environmental impact by thinking about their own rubbish, for example using biodegradable products and a water filter bottle. Tourists must also be sensitive to limited resources like water, fuel and electricity (Tour Operator in Peru, 2008). At the same time, tour guides must brief tourists before the trip about appropriate behavior (Volker, 2006).

Kotler et al. (2006) believed that intrinsic motivation is very important for everybody, whether as a tourist or a tour guide, in the responsibility for the environment and regulations exist for use with those who lack this motivation to conserve the environment. GO and private industries must cooperate in planning and strictly enforcing regulations and laws.

Eco-tourists are always looking for new destinations even more off the beaten track than the last one. If ecotourism grows without regulations, it may easily become another form of mainstream tourism so it must be recognized that regulations and/or other information helps to prevent negative outcomes. The raising of the awareness of tourists is a key factor in the success of the ecotourism industry and improved knowledge on the part of the tourist industry and tourists helps to reduce some of the negative environmental aspects of tourism (Swarbrooke, 1999). Roberto (2007) commented that more environmental awareness leads to a lower level of social

welfare, inferring that the environmental conservation and practice is a good start to sustainable tourism.

Basic Responsibilities of Tourists (Swarbrooke and Weaver)

- The responsibility for obeying local laws and regulations
- The responsibility for not taking part in activities which, while not illegal, or where the laws are not enforced by the local authorities, but which are widely commend by society
- The responsibility for not deliberately offending local religious beliefs or culture norms of behavior
- The responsibility for not deliberately harming the local physical environment
- The responsibility to minimize the use of scarce local resources

Weaver (2006) gave a more detailed list of responsibilities in an analysis of the Himalayan Tourist Code, a British tour company's set of guidelines.

- Remove litter
- The responsibility to minimize the use of scarce local resources
- Help your guides and porter to follow conservation measures
- Keep water clean and avoid pollution
- Respect privacy when taking photographs

An example of a slogan for a holiday code of Thomson tour operator in the UK attempting to educate tourists is, "TAKE NOTHING AWAY, LEAVE NOTHING BEHIND, AND NATURALLY HAVE A GREAT TIME." The adoption of such a slogan is a step towards the practice of sustainable tourism activities.

What are the Basic Responsibilities of Government and NGO?

GO at all levels are becoming more involved in tourism and play a significant role in sustainable development by setting tourism laws. Additionally, the importance of government laws gives power to provide an overall harmony, consistency, and enforceable standards for the industry, minimizing negative impacts and facilitating ecotourism practices (Wearing and Neil, 1999). "Code of practice and guidelines for tour operators, tourists, and developers are ineffective,

if they have no enforcement from policy, regulation, statement of objectives, targets or evaluation procedures of government organization" (Blangy and Nielsen cited in Wearing and Neil 1999: 30).

GO and NGO, along with local communities, tour operators, tour guides and other related sectors, need to collaborate to minimize the negative impact of tourism. One of the ways to achieve this is by controlling the numbers of tourists by legislation (Swarbrooke, 1999; Wearing and Neil, 1999). Swarbrooke believed that sustainable tourism cannot be achieved by regulations or by lecturing tourists but by the development of forms of tourism that give tourists a "feel good" (1999: 142) effect, reflect trends in social values and consumers tastes, maximize benefits, and reduce costs (Swarbrooke, 1999). Tour guides working for GO and NGO are the frontline persons working directly with the tourists at the attractions and need to have positive behavior and to be a model for all tourists.

In short, the tourism industry, GO and NGO, tour guides, and tourists have a responsibility to the environment that allows sustainable tourism to develop as a form of tourism that maximizes benefits, reduces costs, and minimizes the negative impact on the environment.

2.3 Environmental Awareness

2.3.1 What is "Environment"?

Environment is the a variety of places, processes and objects that matter, for good or bad, to particular beings or communities: forests, cities, seas, weather, houses, marshlands, beaches, mountains, gardens, roads and rubbish heaps (O' Neill et al., 2008).

2.3.2 What is "Awareness"?

Awareness is derived from aware meaning "having knowledge of something or somebody, realize something: be fully aware of the risk/danger/threat" (Crowther, 1995).

2.3.3 Environmental Awareness Concepts

Environmental awareness is the possession of knowledge and behavior about the environment resulting in the taking of responsible actions in the interests of its conservation. This relates to all parties concerned.

This awareness comes from education therefore, for tourists to be environmentally aware, they must be provided with information. This information can be

provided in the before and during phases via various forms of mass media. Exposure achieved through the efficient utilization of appropriate media or channel factors must be accompanied by appropriate meanings of and ways of writing messages. Messages must be clear from the beginning, for example "Do not litter" (Weaver, 2006).

2.4 Marketing Concepts

Marketing is all the processes necessary to determine and satisfy the needs and wants of the customers and the company involved. Definitions have been offered by Morgan (1996); Kotler et al. (2006); and Kaser and Freeman (2002) who stated that it is all the activities used to plan, price, promote and sell service or products.

A combination of the marketing elements, products, price, promotion and distribution/place (Kaser and Freeman, 2002; Walker and Lundberg, 2005; Reid and Bojanic, 2010) is known as the marketing mix. This study focused on only two of these elements, promotion and distribution.

2.4.1 What is "Effective"?

Effective is adequate to accomplish a purpose; producing the intended or expected result (Dictionary.Com, n.d). In the context of the present study effective media, messages, and processes mean any media, messages and processes by which tourists can get environmental information clearly and is easy to understand.

2.4.2 Promotion

The concept of promotion is applied to the use of media for transmitting knowledge of the environment to tourists and/or for marketing the tourism service. Tour companies may use all or some of the promotional types to distribute information to tourists. In addition, the concept of planning effective in the promotion is applied to effective planning of media so that information can reach and be easily understood by tourists.

Promotion refers to methods used to communicate with customer markets (Kaser and Freeman, 2002; Walker and Lundberg, 2005; Reid and Bojanic, 2010). A business must have the right mix of promotional components to make customers aware of the product/service and to encourage them to buy. There are at least four distinct types of promotion: advertising, publicity (creating good public relations), sales promotion, and personal selling

(Oelkers, 2007; Reid and Bojanic, 2010). The types of adverting media used in promotion are newspapers, magazines, radios, televisions, direct mail advertising, outdoor advertising, and the Internet. Public relations are the total processes of building goodwill towards an organization or individual. Public relations are publicities, events, news, speeches, and public service activities. Sales promotion, consisting of consumer and trade promotion, is a short-term incentive to encourage the purchase or sale of a product and/or service. Personal selling is a direct effort made by a salesperson to convince a customer to make a purchase. The advantages of personal selling are that customers can rapidly receive information, there is an effective relationship, it is easy to persuade customers, a lot of information about a complex product can be provided, and a quick response can be received (Ralph and Richard, 1995; Peter J.P. and Donnelly,Jr. J.H., 2001). Morgan (1996) added that promotion is direct marketing[3].

Effective promotion requires planning. A number of planning steps for promotion were suggested by (Oelkers, 2007), including:

(1) Decide a purpose. Promotion has at least three purposes: providing information, reminding and persuading.

(2) Design the message appropriate to the business's target audiences

(3) Determine the promotion mix and the media to use. The message can be conveyed through any of the four types of promotion.

(4) Develop a budget

(5) Create the specific promotions and schedule them for the year

(6) At the end, measure the effectiveness of each promotion and improve the plan

2.4.3 Distribution

Distribution refers to the manner in which products and services are delivered to customers. Distribution in the marketing of services includes a decision regarding customers' involvement in the production process (Kaser and Freeman, 2002; Walker and Lundberg, 2005; Reid and Bojanic, 2010). Many hospitality industries are making greater use of distribution channels to increase product/service awareness and the number of possible buyers in the potential

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[3] Direct marketing: any form of marketing communication that allows marketers to talk directly to existing or potential customers, and /or obtain a direct response from them.

market, being able to save time and money in reaching customers face-to-face (Middleton & Hawkins, 1998; Kotler et al., 2006). In selling a tourism product, some companies prefer to have distributors (intermediaries), such as airline company, Toyota Company. Others work directly with customers. Figure 2-2 shows ways of contacting customers in the tourism business.
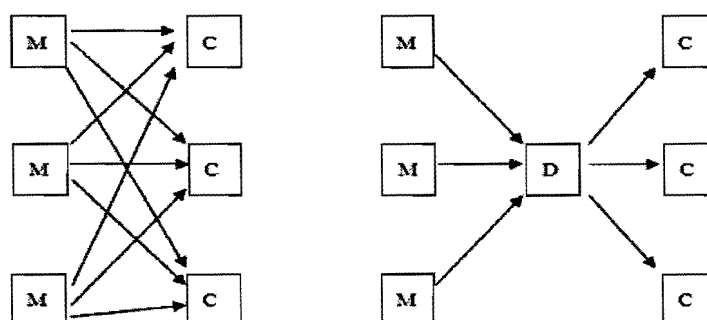
Number of contacts without a distributor   Number of contacts with a distributor

M x C = 3 x 3 = 9   M x C = 3 + 3 = 6

M=Manufacturer   C=Customer   D=Distributor

Figure 2-2 Marketing Channel Transactions (Kotler et al., 2006: 501)

Figure 2-3: 25 shows that tourism product can directly go straight to customers or through tour operators or travel agents. Compared to the environmental knowledge distribution of tour operators/companies, the environmental knowledge can be absorbed by tourist directly or through tour operators, travel agents or other related stakeholders.

Service in tourism is different from product service as it is intangible and often subject to volatility due to politics, weather, and other factors (Seaton and Bennett, 1996). One way to overcome this is through the provision of information to customers and this allows them to make their own decisions about the service. Part of this service involves them in part in taking responsibility in sustainable tourism (see above – Responsible Tourism) but, to take responsibility, they must be informed, an action that involves the tour company being pro-active in providing this information before the commencement of the trip (Swarbrooke, 1999).
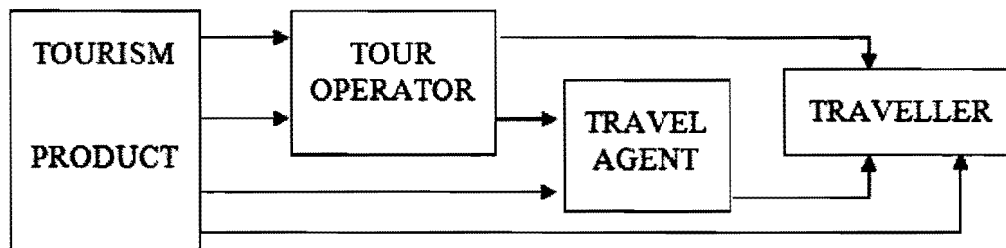
Figure 2-3 Distribution Channels (Seaton and Bennett, 1996: 153)

2.4.4 Effective Transmission Processes

The concept of distribution above is relevant to the process of transmitting environmental information to tourists. Tour companies may use the distribution concept to transmit information to tourists though intermediaries or directly to tourists. Direct and indirect ways of contacting tourists are both effective processes (Seaton & Bennett, 1996; Kotler et al., 2006). Kotler et al. (2006) showed advantages of contacting through intermediary in that it spent less time than contacting directly to customers.

2.4.5 Media Usage

The business world uses different media in spreading information to tourists. Seaton and Bennett (1996) and Kotler et al. (2006) mentioned the usefulness of Information Technology (IT) and stated that it had become a fact on life for the travel industry and it is difficult to imagine how the industry could survive today without it. Postal and telephone services are also available but they are slow and less reliable. IT is a quicker, more efficient, and reliable form of communication, better able to cope with the increasing demand and a constantly changing industry. Oelkers (2007) noted that media also includes billboards, newspapers, magazines, television, radio, direct mail, and the Internet.

In a case study, Seaton and Bennett (1996) identified promotional strategies. The company involved in the study, Direct Holiday UK, employed a wide range of media such as brochures, radio, national and local press, and television. The authors added that Thomas Cook, a large, successful, national business, used similar media for promotions such as telephone, television, press and brochure. For this reason, customers are willing to access information and book tours without face-to-face contact. Kotler et al. (2006) mentioned that tourist sites are needed to advertise to attract tourists by using channels as television, national magazine, travel

publication and work with business-travel promotion. Oelkers (2007: 238) classified media into four basic types:

(1) Print: newspapers, magazines, yellow pages, brochure, and/ or booklets

(2) Broadcast: television and radio

(3) Electronic: the internet

(4) Outdoor: billboards

Swarbrooke (1999) added that the main types of media relevant to sustainable tourism are guidebooks, journals, and travel literature such as the memoirs and experiences of travelers. The Cambodian Minister of Environment noted that mass media such as radios, televisions, videos, and cultural events are the most reliable ways to reach wider audiences and make tourists aware of the environment (Mareth, 2003).

In conclusion, four types of *media* can be used to promote a physical product or a tourism product, print (newspaper, magazine, yellow pages, a flyer, a brochure, a booklet, or travel publication), broadcast (television, radio), electronic (internet), and outdoor (billboard). Each type can be used according to the company's selection. Morgan (1996: 219) mentioned that "some forms of promotion are designed to have an immediate effect on sales. Others can be argued to be a along terms of changing in the customers' awareness, attitude, and attention to purchase or knowledge of the product's attributes." The media plays a significant role in both shaping tourists' behavior and raising awareness of issues relating to sustainable tourism. The media must contribute to the development of more sustainable forms of tourism (Swarbrooke, 1999).

2.4.6 Effective Media and Messages

When using media to promote a product or service, consideration is needed about effectiveness, time consumed, and budget. The effectiveness of marketing campaigns is allied to media effectiveness (Seaton and Bennett, 1996). The selection of media is based on five factors (Oelkers, 2007):

(1) Target customers

(2) Cost of media

(3) Reach – the total number of customers who are exposed to the advertisement

(4) Frequency – the total number of times that the target audience is exposed to the advertisement

(5) Lead time – the time needed to prepare the advertisement

Oelkers said "no matter what media are selected, the form of the advertisement requires knowledge of the basic principle of design. Three of the most effective words in advertisements are *new*, *easy* and *results* (2007: 238)." Morgan mentioned that "it is very important that the choice of where to advertise is based on knowledge of the target market segment" (1996: 226). The key factors in choosing a medium are:

(1) Coverage: will it reach the right audience?

(2) Cost effectiveness: will it do so at an affordable price?

(2) Impact: can it communicate the message in an effective way? (Morgan, 1996)

2.5 Related Laws in Cambodia

Sustainable tourism requires involvement from every stakeholder, including GO Swarbrooke (1999) believed that GO have a major role to play in the development of more sustainable forms of tourism and they could do a great deal more to make tourism sustainable. This could be done through legislation and statutory regulations in areas of a) tourist behavior b) tourism industries, employees' working conditions, wages, and rights c) the social and cultural impacts of tourism d) the impact of tourism on wildlife f) the use of private car tourism.

2.5.1 Laws of Ministry of Tourism

Ecotourism aims at a high level of tourist satisfaction, meaningful experience, increasing sustainable awareness, and sustainable tourism practice. MoT encourages ecotourism to consider a) resource efficiency by minimizing the use of scarce and non-renewable resources in the development and the operation of tourism facilities and services b) environmental cleanliness by minimizing air, water, and land pollution and the generation of waste by tourism enterprises and visitors (Ministry of Tourism Cambodia, n.d).

A draft law on tourism had the dual objectives of promoting growth of the sectors and meeting the private sector's demands for a simpler and more predictable legal framework that would reduce business risk and encourage greater investment (Set Kao et al.,

2008). The Royal Government and the MoT developed a new law to promote tourism amid an economic downturn. The tourism law was ratified by His Majesty the King Norodom Sihamoni on June 10th, 2009. It clearly defined demands for the GO and the private sector to develop the tourism industries and ensure higher quality services. The law also mentioned the role of the ministry in supervising business industries. Thong Khon, the Minister of Tourism, said, "The purpose of the law is mainly about developing the tourism industries, which in return will help to reduce poverty." (2009) The law enabled GO to have more control over the tourism sector and ensured that the establishments working in the industry had formal licenses that are renewed on a yearly basis (Global Times News, 2009). The Royal Government created an ecotourism law that was about balancing conservation and development by a) minimizing negative impacts on Cambodian nature and culture b) optimizing conservation by appreciating the natural and socio-cultural carrying capacities c) respecting environmental laws and regulations as well as local cultural norms (Ministry of Tourism Cambodia, n.d).

In an interview, Mr. Long Kheng, a government officer of the Ministry of Environment (MoE), indicated that there had been no law related to tourists' behavior towards the environment during visits to attractions. This was because the MoT was a new government agency. He also mentioned that when he visits tour companies or tourist sites he usually gives some advice to people who work in ecotourism about what tourists should and should not do. He suggested the ecotourism industry in the TSGL should adopt the laws from MoE and the Ministry of Agriculture, Forestry and Fishery (MoAFF).

The Royal Government did further work in recognizing the unique ecological, environmental, economical, social, and cultural significance of the TSGL, by the preparation of the "Royal Decree on the Establishment and Management of the Tonle Sap Biosspher Reserve," signed by the King, Prime Minster and Minister of Environment on 10th April 2001. Among the eleven articles in the degree, it mentioned that:

(1) The Prek Toal Core Area in the TSGL is defined as a national park or wildlife sanctuary, which is devoted to long-term protection and conservation of natural resources and ecosystem

(2) Ecotourism is allowed in the core areas

(3) Management activities that cause degradation and destruction of biodiversity are not permitted (Ministry of Environment, 2001)

2.5.2 Laws of the Ministry of Environment (MoE)

"Environmental Protection and Natural Resource Management" was set up to ensure the good condition of the environment in Cambodia. It was ratified by His Majesty the King Norodom Sihanouk on December 24th, 1996. This law mentioned that the natural resources of the Kingdom of Cambodia which primarily consist of land, water, airspace, air, geology, ecological systems, minerals, energy, petroleum and gas, rocks and sand, gems and stones, forests and forest sub-products, wildlife, fish and aquatic resources shall be preserved, developed and managed so they are used in a rational and sustainable manner.

The purposes of the law were:

(1) To protect and promote environmental quality and public health through the prevention, reduction and control of pollution

(2) To assess the environmental impacts of all proposed projects prior to the issuance of the decision by the Royal Government

(3) To ensure the rational and sustainable conservation, development, management, and use of the natural resources of the Kingdom of Cambodia

(4) To encourage and enable the public to participate in environmental protection and natural resource management

In addition, laws of "Natural Protection Area" and "Environmental Protection and Natural Resource Management" stated that natural resources and waste must be well managed and conserved by MoE, other related Ministries and all business enterprises. All Cambodian citizens must collaborate in protecting the natural resources and minimize waste. The MoE is responsible for announcing about the protection and conservation of natural resources, and improvement of biological diversity and the ecological system. The Provincial Department of Environment and local authorities are responsible for the protection of natural resources, posting environmental protection signs, the organization of rubbish bins in public places, and the collection of waste. MoE is required to evaluate the impact on the environment and the natural resources by the business enterprise (Ministry of Environment, 1996; Ministry of Environment, 2008).

Different sub-decrees exist, such as "Solid Waste Management" dated April 27th, 1999. It was prepared to supplement the law above and to regulate the management of solid waste in a proper, technical, and safe way in to ensure the protection of human health and the conservation of bio-diversity. This sub-decree applies to all activities related to disposal, storage, collecting, transporting, recycling, and dumping of garbage and hazardous waste. Water pollution control and solid waste management are practiced in the Kingdom of Cambodia to prevent and reduce the pollution in the public water areas and to prevent the throwing of waste in public places. The MoE is responsible for this work (Ministry of Environment, 1999). Example of this are signs in public gardens and other areas in Battambang town to make people aware of preserving the environment (see Figure 2-4 and Figure 2-5).

Figure 2-4 Sign Board in Public Garden

Figure 2-5 Sign Board in a Village

His Excellency Yim Chaily, a Deputy Prime Minister of the Kingdom of Cambodia, talked in local television on 14 August 2010 about regulation # 001 of the Kingdom of Cambodia. This was about protection of the environment, biodiversity, inundated forests, and education of the local people in the TSGL.

2.5.3 Laws of the Ministry of Agriculture, Forestry and Fisheries (MoAFF)

The Royal Government of the Kingdom of Cambodian set out its strategy and action plan to protect freshwater fishes, forests and wild plants, animal resources, and for community participation and education. Environmental laws support biodiversity conservation. Wildlife protection laws provide a clear, regulatory framework regarding management using and conserving wildlife (ADB Loan, 2007).

The Royal Government has a draft fisheries law. The purpose of this law is to establish a framework for management, protection, conservation, utilization, exploitation, inundated forestation and development of fisheries to ensure sustainability of the fishery resource for the interest of society, the economy and the environment in accordance with the national fisheries policy (Minsitry of Agriculture, Forestry, and Fisheries, n.d).

The purposes of these laws are to conserve natural resources. MoE focuses on the protection, conservation and management of natural resources for long-term use and sustainable development and use by future generations. In contrast, the primary focus of MoAFF is to manage fish harvesting and improve fish production. The MoT has a law related to the development of the tourism industry to ensure a higher quality of tourism services. In these ways, the GO have important roles in conserving the environment and natural resources as well as developing ecotourism. The laws can be applied in the TSGL to minimize negative environmental impact and can also be used to maximize conservation of the environment for local residents.

2.6 Osmose Organization

2.6.1 Organizational History

Osmose was founded in 1999 and aims to develop environment awareness in the 31,382 hectares of Prek Toal Core Zone (see Appendix A). Osmose has progressively pursued an integrated approach linking short-term priorities, such as bird colony protection and poverty reduction with long-term appropriation, for example, environmental education and alternative

income generation activities. It is a local initiative, born from the love of the magnificent and extraordinary natural Prek Toal and the consciousness about the threats it faces. Osmose focuses on preserving and sustaining the water-bird colonies of the lake while assisting in the development of local communities. It was registered as a national NGO in Cambodia on August 3rd 2007, and has been supported by different donors, such as the Embassy of the United Kingdom in Cambodia, UNESCO, Nicolas Hulot Foundation, Veolia Environment Foundation, Belgium Technical Cooperation, Australian Embassy, Asian Development Bank (ADB), United Nations Development Program (UNDP), Terre des Hommes Belgium, and Total Fuel Company.

Osmose (in English, osmosis) is a French word meaning the exchange process between two liquids through a semi-permeable membrane. It also means being in harmony and balance. The original purpose of the organization was to restore harmonious links between humans and the natural environment.

The logo of Osmose is:

The first "S" in the name of organization represents a bird and the second represents humanity

2.6.2 Organizational Structure

There are three units in Osmose, ecotourism, environmental conservation, and community development. Each unit has one coordinator operating under a single supervising manager. The ecotourism unit consists of two people, the coordinator and the boat driver who carries tourists between Siem Reap and the floating villages. The total number of employees in Osmose is 29, consisting of 2 foreign volunteers and 27 Cambodians. Of these 27, 9 work in the Osmose office and 18 work in the field (see Figure 2-6: 33 for the structure of Osmose).

The tour guides are called "freelance tour guides" as they do not work full time for Osmose. The coordinator and tour guides said, "The payment is about 30 UD$ to 40 UD$ per trip. This amount of money is less than other companies." These tour guides have a year contract with Osmose and are evaluated after each trip by tourists about their transmission of information, environmental awareness, and behavior. The tour guides are responsible for tourists' safety and the preservation of nature. For instance, at the bird-watching platforms[4] the guides have to check

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[4] There are about 25 platforms to watch birds in the Prek Toal Core Area.

the number of tourists who climb on to the platforms. They also create interaction between the tourists and villagers so that tourists can learn about the culture, way of living, and see some fishing equipment of the local people.

EE   =   Environmental Educator
CDW =   Community Development Worker
▓▓▓ =   Employees work closely to ecotourism
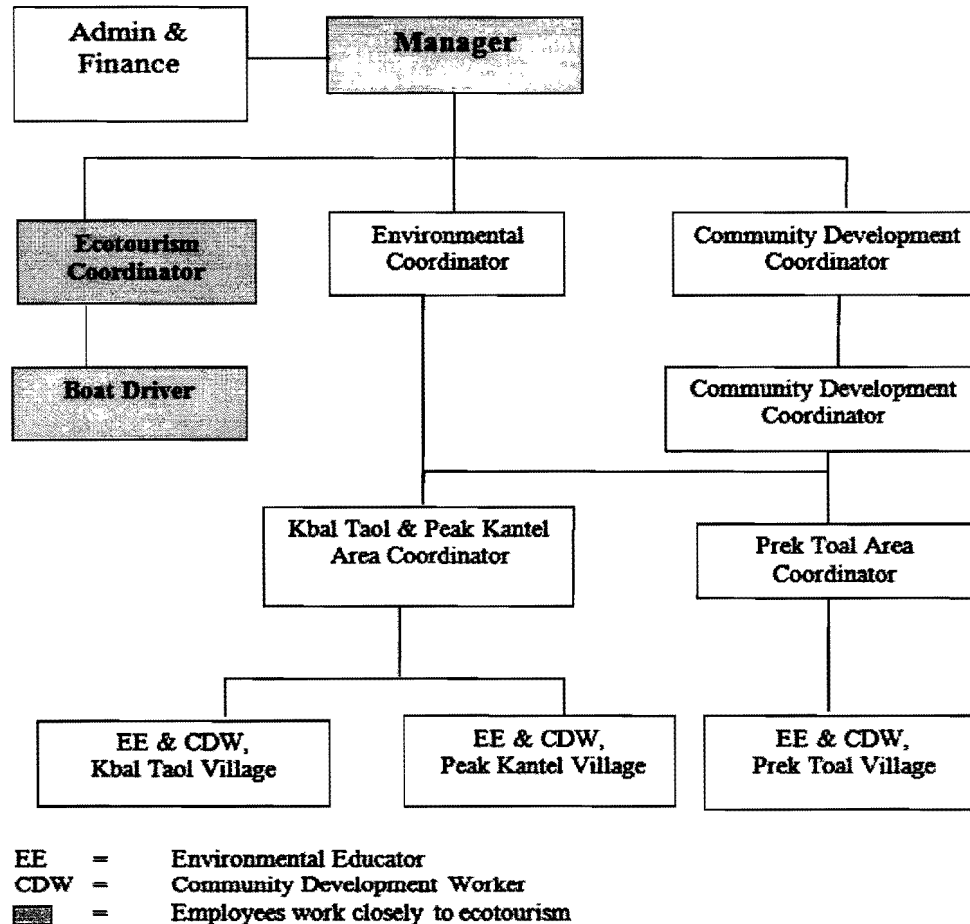
Figure 2-6 Organizational Structure

2.7 Related Studies

There are a number of studies related to the work done by Osmose.

A study of "the ecotourism management opportunities in improving water-bird conservation and management in the Prek Toal Core Area of the Tonle Sap Biosphere Reserve" conducted by Neou Bonheur, Deputy Director of the MoE looked at the diversity of species in the lake, the impact, potential of ecotourism, economic evaluation, and ecotourism policy recommendations. One hundred and twelve visitors who had been on tour to the Tonle Sap prior

were interviewed, in addition to park rangers and government officers. The author also used personal observation to collect further data. The study found that the appropriate number of visitors does not produce any noticeable impact on the water-birds in the attraction. However, the frequency, behavior, watching distance, numbers and locations of viewing towers, noise of engines and sizes of boats, and zonings for restricted use do have impacts. Recommendations were made to all related stakeholders in the core area to implement responsible tourism. These recommendations were:

(1) during November and December, when birds are looking for low-disturbed areas, a minimum watching distance of about 400m should be observed to avoid frightening the birds

(2) paddle boats are highly recommended as this type of transport produces low levels of noise

(3) there is a lack of waste management. Local communities and tourists must be encouraged to participate more actively in effective waste management

(4) this core area should not be profit-oriented, and it must be kept in mind that the main objectives are to promote awareness and conservation activities as a part of the Tonle Sap Biosphere Reserve (Bonheur, 2003).

The recommendations of the study were made for all stakeholders, such as government institutions, local residents, fishing lot owners, local communities, and ecotourism businesses, who worked in this area, but they did not tell what should be done with tourists. The study only mentioned two types of media (websites and brochures) which can be used to make the Tonle Sap Lake well-known and attractive to tourists, and did not state the effective media for the transmission of environmental awareness to tourists.

A paper by Luo Y. and Deng J. (2008) examined the relationship between environmental attitudes measured by a new environmental paradigm and nature-based tourism motivations at a national forest park in China. This study involved 335 visitors. The study reported that to achieve long-term nature-based tourism or ecotourism, the following was necessary:

(1) Identification and segmentation of eco-tourists to visit the park

(2) Information to the public about what the site has, how it functions as a social,

economic and ecological system, and information to visitors how the site could function better if properly protected through the efforts of all people, including visitors themselves.

(3) Environmental education should be emphasized and used by the park and tour guides to reinforce and/or enhance visitors' environmental and social concern.

(4) Sustainability can not be achieved just at the destination level. It requires relevant national laws regarding environmental education and monitoring.
The study illustrated how environmental education and interpretation can motivate people to visit ecotourism destinations (push aspect of motivation). And that ecotourism in the long-term depends on environmental education of local people and tourists. However, this study did not mention   the content or the method of education.

A study of "livelihoods sustainability analysis of the floating villages of the Tonle Sap Lake" was done by Meinander (2009). The study involved thirty participants from three floating villages who took part in village survey workshops. The study showed that the livelihoods of local people in the TSGL are not sustainable because of the decline in natural resources. Most of them depend on natural resources as a major source of income. Meinander suggested alternative livelihood activities for local people in the floating villages. Examples of these were tourism, intensification of agriculture by the introduction of new agricultural products, intensification of animal farming, introduction of aquaculture plants, production of handicraft, and integration of the management of water resources. Meinander's suggestions of tourism did not provide details in terms of sustainability to ensure long-term gains in income.

A study by Huybers and Bennett (2003) investigated "environmental management and the competitiveness of nature-based tourism destinations." They found out about the overall effect of environmental management on competiveness in North Queensland, Australia. Environmental management was the core tourism product and had a positive impact on the industry's aggregate profitability as well as contributing to the industry's competiveness. The study illustrated that the tourism industry in this area and elsewhere may benefit from environmental management and pointed out that the competitiveness of the industry could be harmed if the environment was not protected. It was found that profitability declines as the natural environment management is reduced. Tourists prefer a "green and clean" tourism industry. The study concluded that environmental management is needed in the tourism industry (Huybers and Bennett, 2003).

The other paper about "ecotourism and environmental education: opportunities and constraints for sustainability", showed that environmental education in ecotourism should be a mixture of education and entertainment to suit the clienteles. In this study, education for tourists at the destination was an outdoor education program through innovative curriculum development (Luo Y. and Deng J., 2008; Aphirom and Jean, n.d)

A paper by Wang and Tong (2009) about "community participation in environmental management of ecotourism", reported that community participation is an important feature of ecotourism as it provides a powerful motivation for the protection of resources in a tourism area. This research suggested that the government should supply teaching, training services to local people, and issue laws to ensure the right for community residents' participation.

A study about "Environmental Impact of Adventure Tourists in Krabi, Thailand" found that Westerners are more environmentally friendly than Asian tourists. This paper showed that most of the time Asian tourists make a loud noise at tourist attractions (Hathaitat, 2007).

These studies show the importance of environmental management, aggregate profitability, and contribution to the industry's competiveness. Government agencies' role in enforcing environmental conservation plays a crucial role, and participation by local communities and other stakeholders is essential. Education should focus not only on local people but also on tourists and should be mixed with entertainment. Long-term ecotourism can be achieved by identification and segmentation of eco-tourists, provision of information to the public about the site and its functions and inform to visitors about protection of the site. These must be supported by environmental education, national laws on environmental education, and monitoring.

2.8 Conceptual Framework

The conceptual framework guides the steps of the research as set out below:

(1) Government laws related to environmental conservation, for example, protection of birds, use of paddle boats, control of distances for watching birds, and correct waste disposal are announced to Osmose and these laws are investigated. Ecotourism and marketing concepts are reviewed. The impact of these laws and concepts on Osmose are assessed.

(2) Osmose operations and regulations are investigated to check that laws are adopted

and implemented correctly by the organization. Osmose prepares regulations for tourists, for example, correct disposal of litter and restrictions on noise. Osmose publishes environmental awareness information for tourists.

(a) Osmose writes environmental messages using different media, such as leaflets, the Internet, magazines, booklets, and books.

(b) Content/knowledge of each message is assessed.

(c) Different processes are used to deliver the messages to tourists. Osmose considers the following questions: a) How to deliver message to tourists? b) How often to do it? c) When to do it? d) What are the popular media tools?

(3) Tourists' perceptions of effectiveness of media, knowledge type and process for ecotourism, are investigated.

The framework showing the path of the research is shown in Figure 2-7.
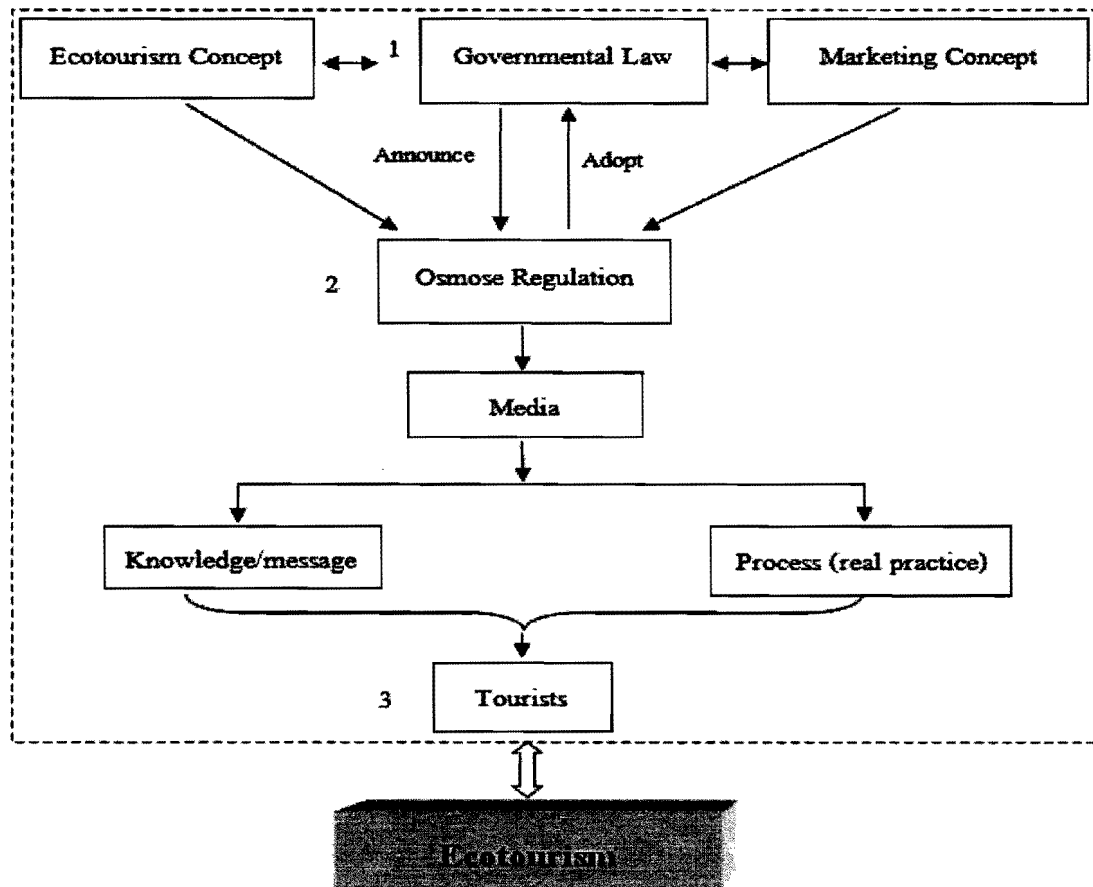
Figure 2-7 Conceptual Framework

2.9 Chapter Summary

Ecotourism involves environmental traveling and conservation of natural resources. It is most effectively achieved when all stakeholders are involved, including tourists, in the presence of proactive management. The ecotourism industry aims at wealthy, long-stay, and educated tourists so it needs to consider its market by performing customer segmentation.

There is the requirement of national laws to enforce adherence to ecotourism principles and good environmental management to make it economically feasible, provide entertaining educational activities for tourists, and deliver environmental information using different forms of media to visitors. This delivery must emphasize features of the site as well as the desire to have tourists involved in the process of environmental conservation.

Previous research suggests tour companies and organizations are working on the factors that have an impact on the TSGL aware about frequency of tourists' visits, behavior, watching distances, numbers and locations of bird watching platforms, transport means, and restricted zonings.

CHAPTER 3

RESEARCH METHODOLOGY

The research methodology was designed to address the research objectives of the identification of the types of media, messages used in each media, and processes of transmitting knowledge to tourists by Osmose, as well as the investigation of the effective media, messages, and processes as considered by tourists, tour guides, park rangers, villagers, and Osmose officers.

This chapter discusses the choice of a qualitative approach, the research design, area of the study, population and sample selection, research instruments, data sources and data collection methods, data analysis, validity and reliability of data, scope of the study, and expected outcomes.

3.1 The Choice of a Qualitative Approach

A qualitative approach was used in this study as it was considered the most appropriate method to the topic and the objectives. A qualitative approach (Bryman, 2001) cited by (David M. and Sutton C., 2004) is used in research because of its suitability for the objectives of the study, emphasizing words in collection and analysis of data, and focusing on narratives or descriptions of an organization's work. Such features are appropriate to the discovery of existing environmental knowledge in the media and the collection of data from tourists, tour guides, park rangers, villagers, Osmose officers, and government officers through descriptions using words. Unstructured interviews were used with the government officers. Semi-structure interviews were also used with Osmose management team, tourists, tour guides, park rangers, and villagers as an effective means of gathering data in different contexts. Observations were completed of tourists while visiting the site to collect real and rich data from their actual interaction with people and attractions. Documents were collected from Osmose for a deeper analysis of issues relating to ecotourism and environmental awareness. All of these techniques are qualitative (Hair, Jr., J.F. et al., 2007).

3.2 Research Design

The study consisted of three phases of investigation (see Figure 3-1). The first phase, involved an unstructured interview with the Manager and ecotourism Coordinator of Osmose to find out about the work of the organization. The interview aimed to obtain information about the ecotourism activities to assess the organization's appropriateness for the study. The research topic was then defined under the supervision of Dr. Suthida Jamsai Whyte and Dr. Michel Plaisent.

UNSTRUCTURED INTERIEWS ⟹ LIBRARY RESEARCH ⟹ FIELDWORK

(Exploration of Osmose's work)

(Exploration of existing theories, research and laws)

Document collection of media, messages and processes

Semi-structured interviews with 2 Osmose's officers

Semi-structured interviews with 10 tourists and behavioral observation

Semi-structured interviews with 2 tour guides, 5 park rangers, and 3 villagers

Figure 3-1 Research Design

The second phase involved library research to explore and review the relevant published and unpublished journals, books, thesis, and research outside and inside Cambodia as well as in the TSGL. Related laws from the MoE, the MoT, and the MoAFF were obtained from electronic sources and from interviewing government officers. These were studied in relation to the topic.

The final phase involved fieldwork to obtain data. The fieldwork consisted of four main steps:

(1) collecting existing printed materials, such as brochures, booklets, guidebooks,

newsletters, posters, magazines, reports, and training documents to learn about the work of Osmose. The training documents were used to train new tour guides in 2009.

(2) semi-structured interviews with the Osmose Manager and the ecotourism Coordinator

(3) semi-structured interviews with American and New Zealand tourists to discover their perspectives of environmental knowledge and the most effective media, knowledge types/messages and processes of transmitting knowledge used by Osmose. These interviews were also used to find out their recommendations to implement ecotourism in the TSGL. In addition, tourists' behavior regarding environmental matters was observed during their visit. American and New Zealand tourists were interviewed as these were the nationalities of the tourists who could speak English in the research area at the time of the research during the peak season in early November 2009.

(4) semi-structured interviews with two tour guides, five park rangers, and three villagers to obtain information from Cambodian workers' perspectives to address the research objectives.

3.3 Area of the Study

Osmose in the TSGL of Cambodia is the target organization to study as outlined in (section 2.6: 31-32). Osmose has progressively built an integrated approach linking to the conservation of birds and fishes, environmental education (EE), ecotourism (ET), and local development (LD). The study purposively focused on one target project – *the ecotourism (ET) project* - which established the first environmental-respecting tourist activities on the TSGL in 1999 (Osmose, 2008). The three villages in the TSGL in which Osmose worked were the study villages (see Figure 1-3:7).

3.4 Population and Sample Selection

The population for this study was the Osmose management team, government officers in environmental and tourism departments, tourists, tour guides, park rangers, and villagers. The Manager and the Ecotourism Coordinator of Osmose were the key informants for this

research because they were the people who prepared the regulations for tourists, published media, organized tours, and contacted the government and other tour companies, as well as training tour guides. They were the executive officers in Osmose. A deputy chief of PDoT, a deputy chief of PDoE, and an officer MoT were interviewed to get knowledge about the actions of these GO towards ecotourism and to find out about existing government laws on ecotourism.

The fieldwork part of the study took place in November 2009 and at the time there was a group of ten tourists eight Americans and two New Zealanders completing a tour of TSGL. This was the largest group of visitors for that month and all participated in the study. It was considered that this number of tourists was large enough to provide adequate data to address the research objectives. Two tour guides, five park rangers, and three villagers were interviewed. The total number of interviewees can be seen in Table 3-1:

Table 3-1 Summary of Respondents

Population	Sample	Position	Numbers of Key Informant
Osmose	Osmose officer	Osmose Manager	1
	Osmose officer	Ecotourism Coordinator	1
	Tour guides	Osmose staff	2
Governmental Officers	Park rangers	Park rangers	5
	MoT	Officer of MoT	1
	PDoT	Deputy Chief of PDoT	1
	PDoE	Deputy Chief of PDoE	1
Tourists	Tourists	Tour leader of the Pacific Discovery Company	1
		Trained tour leaders of the Pacific Discovery Company	2
		Tourists	7
Villagers	Villagers	Boat paddlers	3
Total Sample			25

3.5 Research Instruments

The research used four methods to collect data related to the topic, unstructured interviews, document collection, semi-structure interviews, and field observation. The researcher prepared two sets of questions for guiding the semi-structured interviews and both were checked by the researcher's advisor before the fieldwork. One set was the questions for Osmose (see Appendix C), and the other was for tourists, tour guides, park rangers and villagers (see Appendix D). Both sets of questions were mainly about media, messages, processes, effective media, effective messages, and effective processes. The questions for Osmose also aimed to find out more about the materials to develop the messages that the organization wished to deliver and the content of lessons for training newly employed tour guides. The questions for tourists and other informants explored more the area of recommendations. The researcher also observed the behavior of tourists, tour guides, park rangers, and villagers towards the environment of the TSGL.

3.6 Data Sources and Data Collection Methods

3.6.1 Data Sources

The study had two sources of data, secondary and primary. The secondary data involved information about media, messages, and processes of transmitting environmental knowledge by Osmose and related laws from the MoT, the MoE and the MoAFF. Primary data was obtained from unstructured and semi-structured interviews with the Osmose Manager, the ecotourism Coordinator, three government officers, ten tourists, two tour guides, five park rangers, and three villagers.

3.6.2 Secondary Data Collection

Data was collected from documents from various sources, the Osmose organization, the MoT, the MoE, the MoAFF, the PDoE, and the PDoT in Battambang province, the government of the Kingdom of Cambodia, and the Internet. The documents in Osmose were about media, messages (content) in each media, and processes of transmitting the environmental knowledge to tourists. The documents from the government agencies were about laws related to environment, and from the Internet about ecotourism.

3.6.3 Primary Data Collection

Data collection involved unstructured interviews with the Manager and the Ecotourism Coordinator of Osmose to find out the operational procedures of the organization in ecotourism and any problems encountered. The interview schedule consisted of key questions that acted as prompts for guiding the discussion with the interviewees about the research topic. The key questions were:

what was the Osmose target location?

how many projects were there?

where did most tourists come from?

what were the difficulties in operating tours?

what were the main threats to the environment of the lake?

how did Osmose educate local residents on environmental conservation?

how did Osmose tell tourists about environmental conservation?

Semi-structured interviews were conducted again with the Manager and the Ecotourism Coordinator in Osmose. The interviews aimed to find out the research objectives. The following questions were used:

what media were used?

what were the main messages/content?

what basis did you use to develop messages?

how were these messages transferred to tourists?

when did Osmose spread this information?, where?, why? (For more detail, see questions in Appendix C that acted as prompts in the discussion).

Semi-structured interviews were conducted with tourists. The interviews were done in two ways: individual interviews and group interviews. Extensive notes were taken and these immediately remind and write it down in detail. Tourists were interviewed to investigate their perspectives regarding the effective media, knowledge types and processes as the means to enable tourist environmental awareness in Osmose. The questions (see Appendix D) to guide the interviews were:

did you get any information about the environment of the TSGL?

which media?

how did you get those messages?

Observations were also made in relation to the behavior and attitude of the tourists towards the environment in the TSGL. The observations were done in different places and at different times during the trip. Notes were taken while the researcher saw during the observations and these were recorded in detail immediately after each session.

Because of the small sample size, the answers of respondents may not be necessarily representative of the general population of foreign visitors. However, they provided insights in the work of GO and NGO on ecotourism. Semi-structured interviews were conducted with tour guides, park rangers and villagers with similar questions that were used with tourists.

3.7 Data Analysis

This study used the content analysis method to analyze the data and triangulation method to validate the accuracy of the findings. All data from the Osmose Manager and Coordinator were coded according to references to media, messages in the media, and processes of transmitting environmental knowledge. This was done immediately after the interviews and the coding was collated in groups to indicate the number of references. For example, all data about media were put together in one group, all data about the content (messages) were set together in other group, and all data about processes of spreading the environmental knowledge were gathered into another group. The same method was also used to analyze the data from tourists and observations of tourists' behavior, tour guides, park rangers, and villagers. Two kinds of data were produced, that relating to media, messages in the media, and processes of transmitting environmental knowledge by Osmose and that relating to effective media, messages, and processes. The topics for coding were messages, media, processes, effective media, effective messages, and effective processes.

In addition, the data from all respondents were crosschecked to ensure what one respondent said was reasonable, similar, and/or different to other respondents. For example, when Osmose personnel said that tour guides were the most effective media, then this data was crosschecked to see if the information was in accord with that provided by other respondents. This triangulation method was used to validate the data.

The information received from the Manager and the Coordinator showed how the Osmose organization had been working on environmental conservation for ecotourism. The data obtained from interviewing tourists, tour guides, park rangers, and villagers illustrated their perspectives of the work of Osmose in transmitting environmental awareness to tourists in the implementation of ecotourism. Recommendations from them reflected the most effective media, knowledge types, and processes of transmitting knowledge. Osmose could use these recommendations to take action for environmental sustainability in the TSGL. Tourists' behavior and attitude indicated their awareness towards the environment.

Content analysis method was used because it deals with the forms and antecedent-consequent patterns of forms (Berg, 1995) cited from Smith (1975: 218). Many authors, such as (Patton, 1990; Finn M. et al., 2000; Jennings, 2001; Denscombe, 2003; Joseph et al., 2007) have defined content analysis differently. For instance, Denscombe (2003) defined content analysis as a method that helps the researcher to analyze the content of documents. Patton (1999) stated that it was the process of identifying, coding, and categorizing the primary patterns in the data. The data can be used with any types of text, whether it is in the form of writing, sounds, pictures, interviews or observation (Patton, 1990; Denscombe, 2003).

Triangulation is the examination of evidence from the sources and using it to build a confident justification for themes (Creswell, 2003). Triangulation is a method of cross-checking data from multiple sources to search for regularities in the research data (O'Donoghue and Punch, 2003). Triangulation is also called cross-examination or cross-checking.

3.8 Validity and Reliability of Data

The data obtained from Osmose was returned to the organization for verification. To ensure the reliability of data from tourists, some critical points were considered, such as different times and places for interviewing tourists. For instance, information was collected at three meal times (breakfast, lunch, and dinner) in different places and on the boat to different destinations at different times. Tourists of different ages were also used. In addition, the researcher crosschecked all data among the key informants such as Osmose, tourists, tour guides, park rangers and villagers.

3.9 Scope of the Study

The study focused on the type of media and messages used in each media and how Osmose transmitted environmental knowledge to tourists, as well as tourists' perceptions of the most effective media, knowledge types, and processes as the means of promoting tourist environmental awareness.

3.10 Expected Outcomes

It is anticipated that the results of this research would indicate the types of media, messages, and processes that Osmose used to transmit knowledge of protecting the environment to tourists and the most effective media, messages, and processes of this transmission.

CHAPTER 4

FINDINGS

This chapter outlines the results of the investigation of the activities of Osmose in transmitting environmental awareness to tourists. It identifies types of media and messages used in each media, examines the processes by which Osmose transmits the knowledge, and considers the study group's perceptions of the most effective media, knowledge types, and processes to develop tourists' environmental awareness. Data were collected from documents from related ministries and Osmose, unstructured interviews with Osmose's Manager, Coordinator, tourists, tour guides, park rangers, and villagers. Content analysis and triangulation methods were used to analyze the data.

This chapter is divided into 12 sections: (i) an overview of the site, (ii) Osmose projects, (iii) ecotourism project, (iv) profile of respondents, (v) existing media, (vi) media used during tourists' visit, (vii) processes of transmitting environmental knowledge, (viii) effective media, (ix) effective messages, (x) effective processes, (xi) recommendations of respondents to improve Osmose's work, followed by a summary.

4.1 Overview of the TSGL

Not far from the ancient temples of Angkor, in the heart of Cambodia, is the huge the TSGL, one of the world's most productive bodies of fresh water. It is a valuable resource for Cambodian people and a globally significant ecological site and productive wetland. Each year, millions of fish spawn in the seasonally flooded forests surrounding the lake, attracting a myriad of water-birds and people. The Tonle Sap Biosphere Reserve attracts visitors to enjoy its wilderness and un-touched beauty of wetland vegetation, small and large water-birds, and to learn about the culture and tradition of the floating villages.

The Prek Toal bird sanctuary is a protected site located on the north-eastern shore of the TSGL, one hour from Siem Reap port by motor boat. The area consists of vast undisturbed

flooded forests where thousands of water-birds come each year to breed during the dry season (see Figure 4-1).

Figure 4-1 Prek Toal Bird Sanctuary (Bonheur, 2003)

At the edge of the flooded forests, a lively human community has settled in floating houses, a practical solution to cope with the changing water level of the lake. Visitors can see floating grocery boats, stores, and coffee- and dessert-sellers paddling gently along. All village life is organized around and heavily relies on fishing. Various types of traditional fishing gear are found on the lake. Some villagers raise fish in pens while others set up crocodile farms or raise pigs and poultries behind their floating homes. All kinds of kitchen and toilet waste spill into the lake, causing water around the villages to be very dirty. All villagers use this water for everyday life, including drinking and cooking. Tourists also have no choice and have to use this water for taking showers.

4.2 Osmose Projects

Osmose is currently working on seven projects:

(1) Ecotourism project: Osmose organizes guided bird-watching tours for small

groups of visitors in the core area. The goal is to generate funds for the program and to redistribute benefits to poor families heavily reliant upon natural resources, for example fish, wood, and wildlife. The tours are organized for tourists to become aware of the fragility of the unique ecosystem and contribute finance to the local development program implemented by Osmose in the three villages and through community-based activities to generate direct income for the villagers. The villagers get benefits from conducting paddleboat tours and selling handicraft souvenirs made of water hyacinth in the SARAY Cooperative.

(2) Community-based ecotourism: Osmose started to implement community-based ecotourism services and activities in 2005. Under the coordination of Osmose, the villagers' role is to bring tourists on paddleboats to look around the floating villages. Villagers have home-stay accommodation for tourists. A cooking group has been formed to prepare food for tourists (see Figure 4-2). All benefits are shared equally between the involved villagers.

(3) Environmental education: this program involves 1,100 children between 6 to 14 years old in the three villages, Prek Toal, Peak Kantel, and Kbal Toal.

(4) Local development: this aims to provide poor families with a sustainable livelihood that does not have an impact on natural resources.
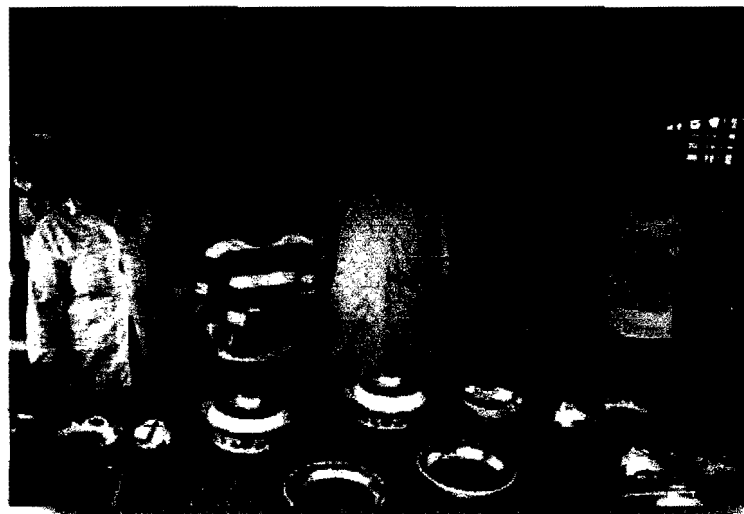
Figure 4-2 Food Preparation for Tourists (Osmose, 2009)

(5) Water Hyacinth Handicraft (called SARAY Cooperative): this women's group weaves hyacinth souvenirs such as mats, baskets, and bags. Osmose facilitates and supports

the SARAY Cooperative to market the products at hotels in Siem Reap Town and overseas. Osmose also brings tourists to see handicraft workshops and buy some of the products.

(6) Conservation: in October 2008, Osmose started a new research project that aimed to test a new management tool on conservation ponds for the benefit of both conservation and fisheries.

(7) Waste management project: this is a part of environmental education project started in January 2009. Osmose provided 10 waste bins in Peak Kantel village to collect, classify, recycle and store rubbish.

4.3 Ecotourism Project

4.3.1 Ecotourism Potential and Issues

In 1998, Osmose hired an ecotourism specialist to study the ecotourism potential of the Tonle Sap area. It was found that the Prek Toal village offered the best attractions for foreign visitors based on easy access from Siem Reap, pristine flooded forests, unique water-bird viewing, and a picturesque traditional floating village. Hundreds of thousands of international tourists each year come to see the Angkor World Heritage site and stay in Siem Reap. As about 40% of foreign tourists already spent a half-day visiting a floating village nearby Siem Reap province, it was anticipated that the Prek Toal village would make a perfect day-trip on the lake.

Since 1999, the Prek Toal village has doubled its number of visitors (EE/ESD Program, 2007). Rules and mechanisms to promote low-impact tourism that benefited the poor needed to be established and it was believed that economic benefits should go directly and equitably to the local communities instead of being retained by tour operators and travel agencies. It was believed that uncontrolled tourism would have negative environmental and social effects on the floating villages in the medium-term future (EE/ESD Program, 2007). In 2001, an ecotourism project started and Osmose organized visits into the core reservation to see the bird colonies. Osmose works closely with the Environmental Research Station[5] (ERS) in

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[5] Environmental Research Station (ERS): is the governmental office in the Prek Toal Core Area that employs the park rangers. The government officers in this office work take care of the environment of the lake.

Prek Toal to administer the natural resources and birds in the reserve.

The study of EE/ESD Program (2007) showed that ecotourism offers benefits regarding the protection of the site and the development of local communities. The site is of great value and interest and has high tourist potential, as it is easily accessible from Siem Reap and/or Angkor. It has major assets such as fish, flooded forests, water-bird colonies, and floating villages. In the floating villages, tourists are able to discover different aspects of village activities, such as fish-raising, fishing operation preparations, boat shops, spirit houses, floating schools, crocodile farms, floating gardens, and traditional medicine.

4.3.2 Major Activities in the Ecotourism Project

The ecotourism project is a new project of Osmose the first ecotourism provider in the TSGL with aims to strengthen its ecotourism activities. This study investigated the tourism activities of Osmose.

4.3.2.1 Production Materials

All documents, regulations and media for the transmission of environmental knowledge to tourists in the ecotourism project were prepared by Osmose. These included posters, leaflets and pictures that relate to the uniqueness of the TSGL, the plants and animals in the TSGL, and the beliefs of the local people to show to tourists during their visits.

4.3.2.2 Tour Activities

Osmose organizes package tours that are promoted on the Internet as group tours and for individual tourists and/or backpackers at varying prices. Osmose sells these package tours directly to tourists but sometimes they are sold to travel agents inside and outside Cambodia. For example, in early November 2009 at the time of the study, Osmose sold package tours to Pacific Discovery Tour Company abroad.

Osmose brings tourists to visit the floating villages, prepares transport, meals, and home-stay accommodation at the site for tourists and the length of stay is usually one night. The number of tourists in each tour depends on the tourists - it can be a big group, a small group, or an individual. Three kinds of boats are used to bring tourists to the bird sanctuary in the Prek Toal Core Area, a small paddleboat that carries five tourists, a medium-sized boat that accommodates fifteen tourists, and a large boat that carries thirty tourists.

4.4.2 Osmose Management Team

Interviews were conducted with the Osmose Manager and Ecotourism Coordinator, key persons who prepare media, messages, contact the government and other tour

companies, and organize ecotourism activities. They gave an insight into ecotourism activities in Osmose and contributed much information.

4.4.3 Tour Guides

Tour guides are key persons to transmit environmental knowledge to tourists. Osmose used these people much more than other means for the ecotourism project. To become a tour guide with Osmose, all candidates must attend internal training conducted by the Manager and the Coordinator of Osmose. The tour guides had a one-year contract to work for Osmose after selection and training by the organization.

There were five lessons in the guide training in 2009:

(1) the environment of the TSGL and threats

(2) flora and fauna

(3) fisheries and the Tonle Sap Biosphere Reserve

(4) population and livelihoods

(5) Osmose activities: conservation, education and ecotourism

The main objectives of the training were:

(1) to tell guides about the TSGL, ecosystem of the lake, fishing, flooded forests, impact of bird collection, destruction of birds' nests, and illegal fishing

(2) to show benefits and results of water-bird protection

(3) to let tour guides join field study and try-out their knowledge with tourists.

Osmose has an ongoing struggle to attract and retain committed guides. A lot of this has to do with Siem Reap's location as a centre for visitors to the Angkor temples. Potential guides with a good command of English and/or French can easily find work by taking tourists around temples, and receive good commissions when bringing their customers to shops. Because of this, Osmose has had to recruit and train tour guides in 2005, 2007, 2008 and 2009.

4.4.4 Park Rangers

Park rangers[6] are required to bring to tourists to see the bird sanctuary, as tours are not allowed to enter without them. They are specialists in the viewing of birds and work in a local village conservation team in the Core Area Management Centre at the tourist site of

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[6] Park rangers are mostly former bird-collectors but now are supported by allowances and trained by WCS organization as rangers. They work in a local village conservation team. For more details see: http://atlas.wcs.org/globalconservation/Asia/Cambodia/Tonle_Sap

the Prek Toal Core Area. The park rangers do not work for Osmose but the organization pays them when they accompany tourists to the bird sanctuary.

4.4.5 Villagers

Three villagers were interviewed. These were boat paddlers in the floating villages who were asked by Osmose to bring tourists on village tours. They showed tourists the culture and traditional life of the local people and instructed visitors about correct behavior in respect to the environment of the lake and/or local culture, acting as models to tourists and local people in the floating villages. These villagers received financial payment for rowing their boats around the floating villages but were not allowed to take visitors into the restricted areas of the bird sanctuary.

4.5 Existing Media

This section presents the media and messages of Osmose, some used to raise tourists' awareness during their visit and others distributed in other locations and/or on other occasions. For example, Osmose posts media on the Internet. At the Osmose office, there are laminated posters, books, magazines, a booklet, leaflets, newsletters, and wall drawings. The laminated posters mainly describe fauna and flora in the TSGL.

This section is divided into three parts. Part one involves personnel who transmit environmental knowledge to tourists for Osmose. Part two deals with printed media, some for sale and some free. Part three is about Internet media.

4.5.1 Personnel

Osmose uses tour guides, park rangers, and villagers to transmit knowledge about environmental conservation to tourists. They all play important roles in educating tourists. Tour guides transmit environmental knowledge to tourists about the uniqueness of the lake and ecotourism project activities. Tour guides give tourists an insight into the ecotourism project of Osmose by accompanying them to visit the environmental education schools, floating gardens, and water hyacinth handicraft workshop. At these places, tourists can see the culture and tradition of the floating villagers.

Park rangers accompany Osmose group tours into the flooded forests to view the birds from the observation platforms. These park rangers have up-to-date knowledge about

the locations of several bird colonies. The platforms are not only used by the park rangers to monitor the breeding colonies but also for tourists to see the birds. Tourists have a truly unique experience in the flooded vegetation, with over 130 species of birds recorded with a growth rate of about 10 percent in their populations since the reserve has been monitored by the WCS organization (Nick, 2007).

Floating villagers are one of the media used by Osmose. Villagers tell tourists about the culture of the local people and nature in the TSGL. They have roles as models taking care of the natural resources when they row the paddleboats for the tourists. The villagers' respect for the environment is an encouragement to tourists to respect the environment of the lake also.

4.5.2 Printed Materials

4.5.2.1 Media for Sale

1) The laminated posters about the flora and fauna (see Figure 4-3: 57 as examples of different kinds of posters). These posters are:

- Map of Water Flow

- The Tonle Sap a Priceless Natural Heritage

- Many Kinds of Fish Species in the TSGL

- Common Bird Species and their Threats

- Endangered Bird Species

- Some Reptiles Species

- Uses of Flooded Forest Trees: for medicine, fish, firewood,

cooking such as yellow flowers from the aquatic plants, construction, and domestic use

- The Belief of the Local People

- The Tonle Sap Ecosystem: it tells about times of the starts of

different seasons, and the different tree appearances in each season.

- The Tonle Sap Trees

- The Tonle Sap Scrub Environment and its Threats

- The Tonle Sap Aquatic Plants

2) "The TSGL: a Pulse of Life". This book describes the richness of the natural resources of the lake, the management of the resources, people, livelihood, and culture of the floating villagers.
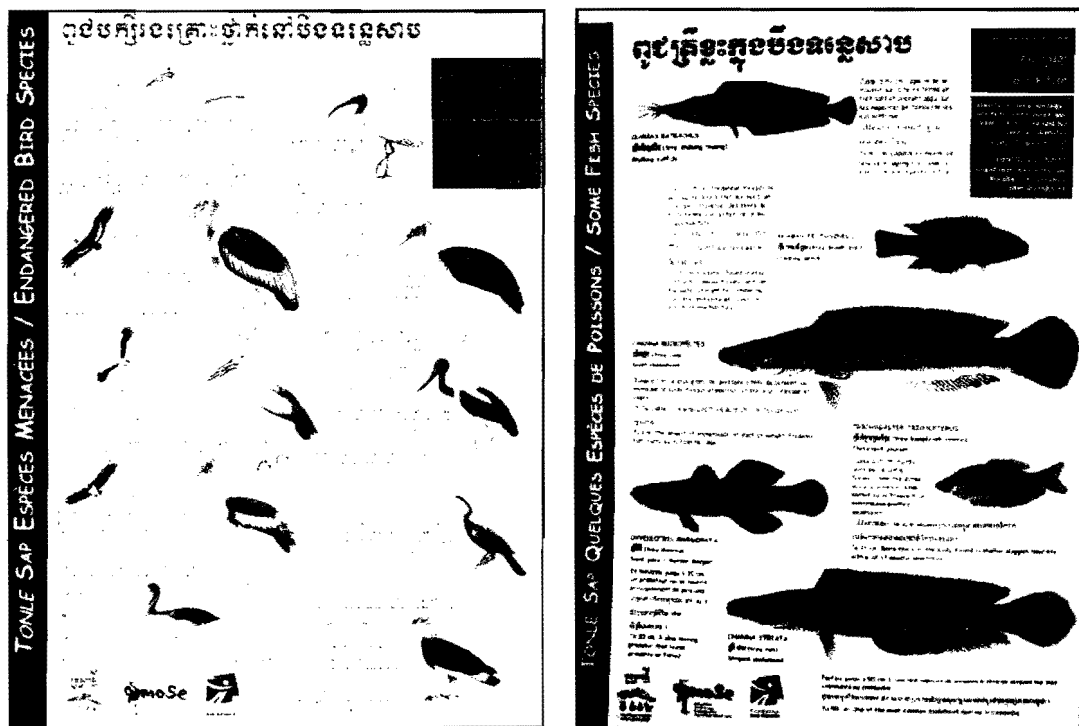
Figure 4-3 Poster of Bird and Fish Species (Omose, 2009)

3) "Cambodian Birds News". This magazine includes Wildlife Books' Review, IBIS in Cambodia, Counting and Monitoring Birds in Cambodia, Mekong Wagtail, and Conservation and Protection of Bird Nets in Cambodia. The magazines describe the endangered birds and some common birds no longer found in the TSGL.

4) "A voice of Fishermen Magazine: Environment, Natural Resources, Water and People". This magazine is about the livelihood of fishermen in the TSGL as the price of goods increases.

5) A travel booklet titled "A boat journey from Battambang to Siem Reap, Angkor" (see Figure 4-4: 58). It describes the scenery along the Sanger[7] River, views, local people's activities, and birds as tourists travel by boat from Battambang province to the TSGL (see Appendix B). Osmose published this booklet for Asian Trails tour operator to promote the site to tourists.

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[7] The Sanger River is name of the river which connects to the TSGL (see appendix 2)

Figure 4-4 Booklet about Boat Traveling

4.5.2.2 Free Materials

1) The Internet is one of the media used by Osmose. Osmose uses its website to post messages about environmental knowledge, the uniqueness of the lake, Osmose programs and/or activities, and tour itineraries for tourists.

2) A leaflet titled "Visit the Bird Sanctuary and the Floating Villages with Osmose" describes the tour itinerary of the TSGL, the concept of Osmose, prices, and activities. It gives details of transportation, entrance fees, tour guides, meals, drinking water, one year's membership of Osmose (see Figure 4-5: 60). This leaflet is used to encourage visitors to buy package tours so that they can support Osmose to conserve the environment. A message about the Osmose vision "Liking conservation, ecotourism, environmental education, and sustainable development" is also in the leaflet. The concept of Osmose, "All profits are allocated to the village development activities and to raise environmental awareness in the floating villages," is mentioned.

3) A leaflet called "SARAY TONLE" (women's life in the TSGL) tells about the women in Prek Toal village who came from poor families and formed the SARAY Cooperative to produce goods made of water hyacinth. The leaflet describes when the cooperative

started, why it started, the benefits to members, and mentions the advantages of this handicraft, not only for local people's incomes but also for the ecological improvement of the lake. The more water hyacinth used, the better the environment of the lake is. This leaflet is free to tourists (see Figure 4-6: 61).

4) A newsletter, "The Darter," mentions about ecotourism's hopes, disillusionment, and Osmose's activities that benefit the communities. It illustrates the uniqueness of the Prek Toal area shelters, the only sizeable colony of Greater Adjutants in South-East Asia.

5) Painted Materials. Two wall-drawings about the ecosystem of the TSGL can be seen in the Osmose office and in Environmental Education Office, Peak Kantel village. The drawings show the relationship between fish, birds, trees, water, and people, as well as the usefulness of the ecosystem of the TSGL. They also illustrate the richness of the natural resources and the livelihoods of the local people based on these resources.

4.5.3 Internet Media

Osmose has its own website to inform tourists about the ecotourism tours. Examples of two messages posted by Osmose about environmental awareness are:

"The tours are ideal for people with an interest in nature and responsible tourism" and "Osmose proposes you a relaxing but educative visit which will enable you to understand the ecological and human aspects of the TSGL."

The Osmose Manager said that posting environmental regulations or advice about tourists' behavior towards the environment through the Internet was found to be not very effective because tourists only check destinations, prices, and attractions.
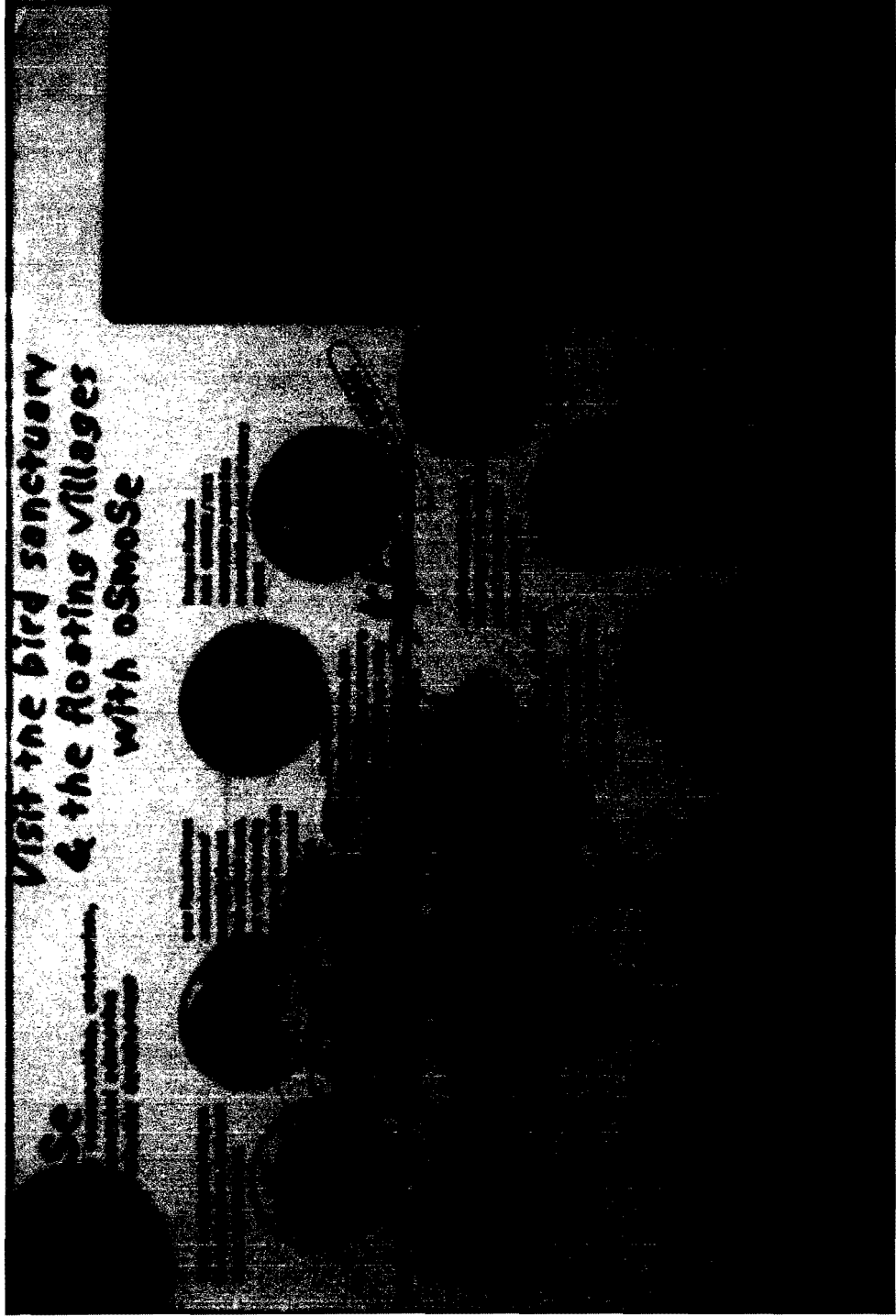
Figure 4-5 Leaflet about Osmose and the TSGL

Even though Osmose had different kinds of media at its disposal to make tourists aware of the environment of the TSGL, it did not use all of them. The Osmose Manager and Ecotourism Coordinator said, "Osmose did not need to spend much time to tell tourists to behave in a way of taking care of the environment of the TSGL". Osmose's experience is that most tourists come from highly educated backgrounds, from developed countries such as France, United States of America, Belgium, and China, and have a good attitude to the environment. Japanese tours will be organized to the TSGL in the near future, said the Manager.
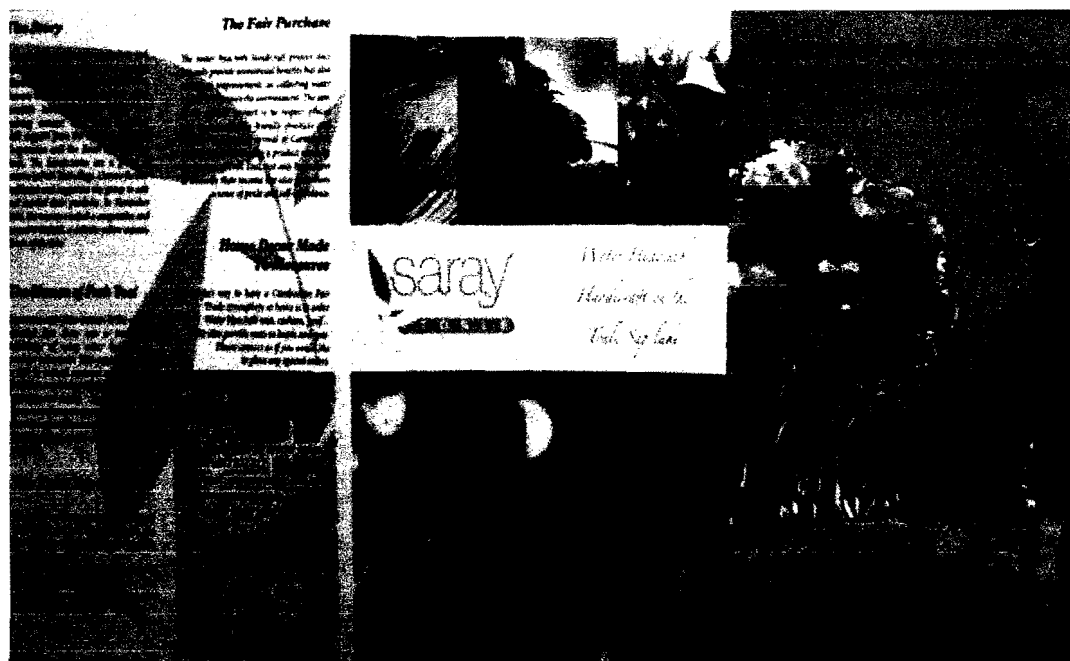
Figure 4-6 Leaflet of the Women's Cooperative

In conclusion, Osmose not only has many materials to tell tourists about the activities that have been implemented, but also has many environmental conservation materials available to make tourists aware of the environment of the TSGL. The materials are books, magazines, leaflets, booklets and wall drawings. These materials are useful for tourists to learn about the natural resources, endangered natural resource species of the TSGL, and the livelihood of local residents.

4.6 Media Used During Tourists' Visits

This section presents some Osmose media and the messages used during the tourists' visit. Tour guides, park rangers, floating villages, saleable materials mentioned in the section 4.5.2.1: 56 and a small note on a boat about the environment are used by Osmose for tourists during the trips.

4.6.1 Tour Guides Act as Media

Osmose used tour guides mostly to transmit environmental awareness messages, environmental conditions of the TSGL, the ecological uniqueness of the TSGL, and activities of Osmose to tourists during their visits. The Manager said using tour guides are a more effective means than using billboards or other media. For example, Osmose used only tour guides to inform tourists of the environmental conservation regulations. Also, they promote environmental protection, such as not throwing rubbish into the water, and give information to tourists about birds' species. Tour guides do presentations to tourists about Osmose's work and the environmental threat to the lake, encouraging their awareness of the environment in the TSGL during the trip.

4.6.2 Park Rangers and Floating Villagers Act as Media

The park rangers and the villagers are good media playing an important role in encouraging tourists to respect the environment of the lake while accompanying them to the site. Despite the restrictions caused by the villagers' lack of language, they act in ways to correct the tourists. For example, when the villagers see tourists throw rubbish into the lake, they turn the boat back to pick it up, and when the park rangers and the villagers hear tourists making noise, they take action to solve this problem through the tour guide by telling them to be quiet. The park rangers and the villagers say that there is small number of tourists who do not respect the environment of the lake. They see a few tourists, especially children from developed countries, making noise at the bird sanctuary and throwing rubbish in the lake. "There are about 10% of tourists who throw rubbish into the lake," said the rangers.

4.6.3 Media in Presentations of Osmose

Some of the laminated posters were used by tour guides in their presentations to tourists during the trip. The presentation was about the uniqueness of the TSGL, environmental threats to the TSGL, and activities in Osmose. The tour guides also used the posters to show

tourists when they saw birds or trees during visits to the site. Both old and new tour guides in Osmose used the same posters. These included:

4.6.3.1 Map of Water Flow. It shows how and when water in Mekong River flows into and out of the lake.

4.6.3.2 The Tonle Sap a Priceless Natural Heritage (see Figure 4-7). This talks about the linkage between the lake, flooded forests, fishes, birds and aquatic reptiles. It states that, without the lake, there would be no flooded forests, and without the forests, there wou..: no wildlife. This relationship can be seen by following the arrow in Figure 4-7.
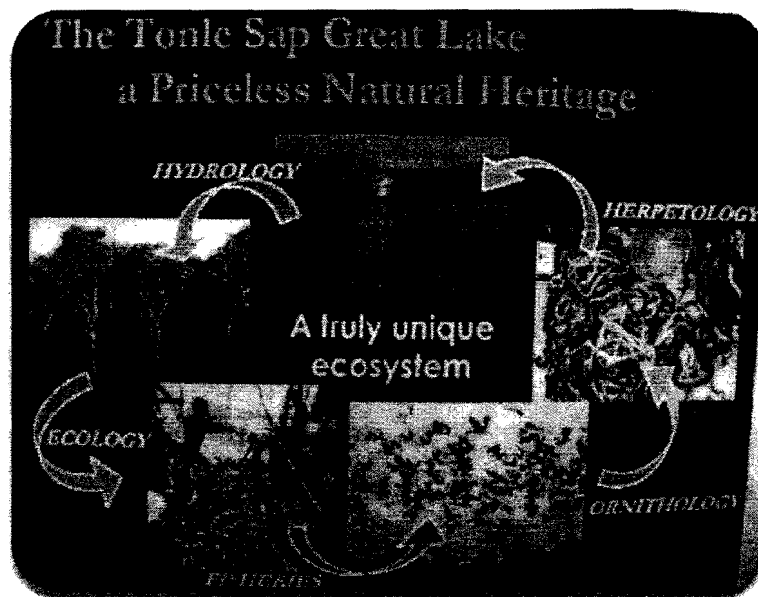
Figure 4-7 The TSGL a Priceless Natural Heritage

4.6.3.3 The Tonle Sap Ecosystem. This describes the relationship between water, flooded forests, fishes, reptiles, and birds (see Figure 4-8).

4.6.3.4 The Tonle Sap Scrubs. This illustrates four kinds of scrub that can be seen in the TSGL. Some of the scrub has negative effects on fishes' habitats.

4.6.3.5 The Tonle Sap Aquatic Plants. This describes four kinds of plants grown in the TSGL.
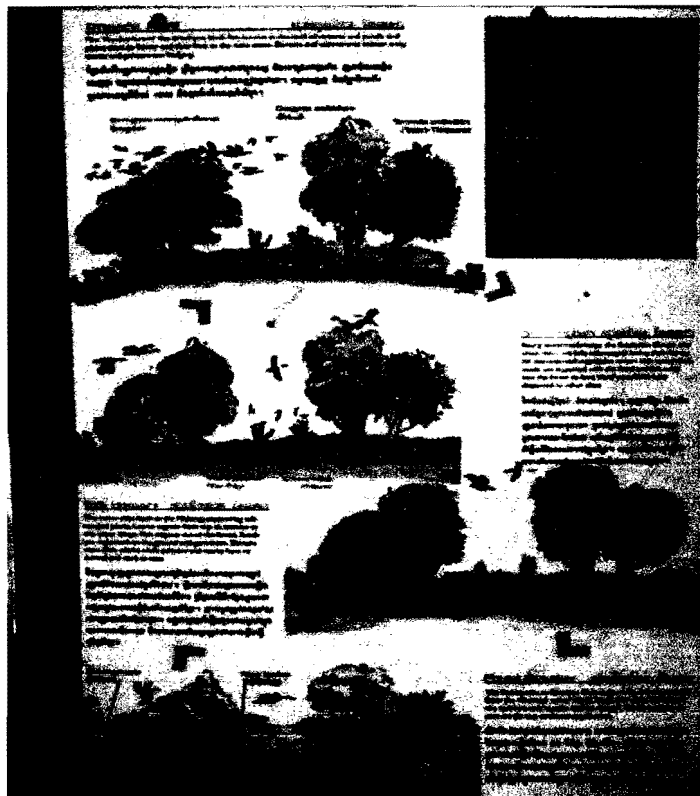
Figure 4-8 The TSGL Ecosystem

       4.6.3.6 The Tonle Sap Trees. Around 200 species of plants have been identified. Some important trees are mentioned in posters, such as Barringtonia Acutangula tree (Daem-Reang Tcuk) and Dyosbyros Cambodian tree (Daem Phtuol).

       4.6.3.7 Common Bird Species. This describes the physical features of fifteen kinds of birds.

       4.6.3.8 Endangered Bird Species. These include the black-necked stork, oriental darter, and spot-billed pelican.

       4.6.3.9 Many Kinds of Fish Species (2 posters). Many kinds of fish are found in the lake. These include the Common Silver Barb fish (Trey Chhapin), Soldier River Barb fish (Trey Chhkok), Mud Carp fish (Trey Pruol), and Striped Catfish (Trey Pra)

       4.6.3.10 Some Reptiles Species. Different kinds of snakes, turtles, and crocodiles are shown with some explanations of how and where they live.

4.6.3.11 Uses of Flooded Forests. This describes the uses for medicine, fishing, firewood, food, construction, and as part of the natural ecosystem providing habitats for birds and fish

4.6.3.12 Beliefs. The poster mentions that fishing communities of the TSGL are strongly connected to their natural environment and regard it as place inhabited by numerous supernatural beings.

In addition, a guide book not produced by Osmose, titled "Guide to know the birds in Cambodia," described the different species of plants and birds and was used by tour guides to show to tourists during the trips. Other media were also posted at the destinations, such as in Gecko Environmental Education Centre, Environmental Education Office in Peak Kantel village and the Preak Toal Core Area Management Centre in Preak Toal village. These included banners of "SARAY TONLE, Osmose's vision, mission, and work of Osmose", posters of "visit the bird sanctuary and the floating villages with Osmose", and "Do's and Don'ts," wall paintings of "richness of the natural resources and livelihood of the local people based on them," and pictures of "natural resources in the TSGL."

Tour guides believed that the content of the presentations was good for tourists to learn about the work of Osmose and the TSGL, and transmited information to tourists effectively. One tour guide suggested that Osmose and other tour guides should study and search for more information about the TSGL to share with tourists. He learnt about the environmental problems and conservation of the TSGL by attending training at Osmose and by reading books.

4.6.4 Media at the Attractions

Some big and small posters were posted at the attractions of the different floating villages and of the boats. The tour visited three different places, the Gecko Environmental Education Centre, Environmental Education Office in Peak Kantel village and Prek Toal Core Area Management Centre. Some of these materials were found in these offices and tourists were able to read them with explanations by tour guides.

Some posters in Gecko Environmental Education Centre were:

(1) The lake receding poster. The poster explains that water in the TSGL starts receding from December to March, and then flooded trees start to be green.

(2) The lake at the low ebb. The poster shows water at a low level from April to July. It also shows birds and green trees in this season. The view of the floodplain from upland areas and close to the lakeshore in this season turns from bluish green to brown and muddy.

(3) The lake at its peak poster. This describes the period from August to November. It shows flooded trees in the wet season and many fishes. The water in the lake is less than 2 metres deep.

(4) The use of aquatic reptiles on the TSGL. This illustrates how the local people make their living by catching fish, snakes, geckoes, and crocodiles.

(5) "How do you use the forest" poster

(6) Floating village tour poster. This describes places that visitors can see in the floating villages, such as souvenir shops, fish cages, and crocodile cages. It also states that the length of the village tour is about one hour and a half.

(7) Attraction and resources poster. This describes:

(7.1) Floating villages. There are 170 floating villages with 80,000 inhabitants on the lake.

(7.2) Fish. The TSGL is the largest inland fishery in South-East Asia, with an annual commercial catch of up to 400,000 tons. Fishing is the main livelihood for most of the people living on and around the lake.

(7.3) Flooded forests. This is the special feature and attracts many people.

(7.4) Some pictures of birds

(7.5) Some pictures of reptiles

Again, banners, pictures, and paintings were posted in the Environmental Education Office, Peak Kantel village to make tourists aware of the environment of the lake and Osmose's work. These included:

(1) Community-based tourism banner about the involvement of villagers in paddling in the bird sanctuary, village tours on paddleboats, and a cooking group

(2) SARAY Water Hyacinth Handicraft banner illustrates the purpose of the project that ecologically improves the lake. The project means that the more water hyacinth used, the better the environment. The plant is used for economical benefit and the products help the women of Prek Toal village to diversify their income. It also gives them a sense of pride and

self-confidence, reviving traditional Cambodian skills.

(3) Environmental education banner tells readers about the numbers of children attending environmental class each year.

(4) Local development banner describes the purposes and interventions of Osmose to improve the livelihood of the people, reduce poverty, and find alternative sustainable income generating activities.

(5) Status of Osmose banner shows that the organization became a Cambodian NGO in August 2007.

(6) Osmose's mission banner is about the start of the organization in the three floating villages, in Prek Toal village in 2003, and in Kbal Toal village and in Peak Kantel village in 2006. Some big and small drawings about the ecosystem of the lake were displayed around the office. Meanwhile, pictures and drawings about the ecosystem, birds, forest, and benefits of the lake were visible in the offices.

(7) A painting shows the relationship between natural resources and people and the usefulness of the ecosystem in the TSGL.

In addition, three posters that related to tourism activities were in the Prek Toal Core Area Management Centre. The first of these was a poster about "Prek Toal Village," describing the main events that happened to villagers since the Pol Pot regime[8] till now. For example, it stated that people were evacuated during the dark days of the Khmer Rouge. Flooded forests and rare and endangered species of reptiles and birds were mentioned in this poster.   The second poster is "Unique Feature of the TSGL." This mentioned the seasonal rhyme of the Mekong River describing the water flow in and out of the lake. The last poster was "Resource Management" which was divided in to two main parts:

(1) "Management problems"- this part mainly focused on the work of government officers to manage the Prek Toal Core Area. A burgeoning population and people's dependency on fishing for a living must be considered in the management of the core area. Maintaining resource productivity and introducing alternative income resources are among the strategies that the government pursues. In visiting the spectacular water-birds colonies of Prek

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[8] Pol Pot regime, from 1975 to 1979, was the period in which about 3 million people were killed. Also it is called the Khmer Rouge period.

Toal village, tourists are contributing to the problem-solving strategy by supporting the Biosphere Reserve and the local community.

(2) "Do's and Don'ts"- this part focused on how tourists should behave in the core area. Water-birds abandon feeding areas, nests and even fledglings if people approach them too often or too closely. Therefore please:

(2.1) Be quiet

(2.2) Take wrappers and bottles back with you

(2.3) Do not encourage boatmen to approach nesting sites too closely. Water-birds are at their most sensitive during the nest preparation and egg-laying stages, and boats should not approach any closer than 300 to 500 meters, depending on the judgement of the accompanying rangers. The birds are less sensitive after egg-hatching, but even then distances of 200 to 300 meters need to be maintained. Also, a small note was posted in the boat, advising tourists to take care of the environment in the lake. The note said, *"Rubbish Bin, Help to Clean Our Lake!"*

In conclusion, many kinds of media existed in Osmose and at the attractions to transmit information related to environmental awareness to tourists. As observed, those materials were posted or used in different places and on different occasions. Many laminated posters were used for presentation to tourists. Some posters were on display at many tourists' stopping points to educate tourists indirectly. Some posters were used to inform them about the ecosystem of the lake, Osmose's activities, village histories, and Dos and Don'ts of tourists' behaviour towards the bird sanctuary and the lake.

4.7 Processes of Transmitting Environmental Knowledge

Contents in the messages were important to make tourists aware of the environment of the TSGL. At the same time, the processes of transmitting information were also very important. How did Osmose transmit environmental knowledge to tourists? Before, Osmose posted the tour itinerary on the Internet. This contained information about environmental awareness, stating that, "Osmose needs responsible tourists to visit the TSGL." Osmose also distributed magazines, books, booklets, and newsletters to tour companies.

During the tour, there were many stopping places for tourists to view different nature, attractions, and people. At each stopping place, there were different kinds of information about the ecosystem, birds, fish, flooded forests, and reptiles. At these places, tourists learnt about the environment of the TSGL.
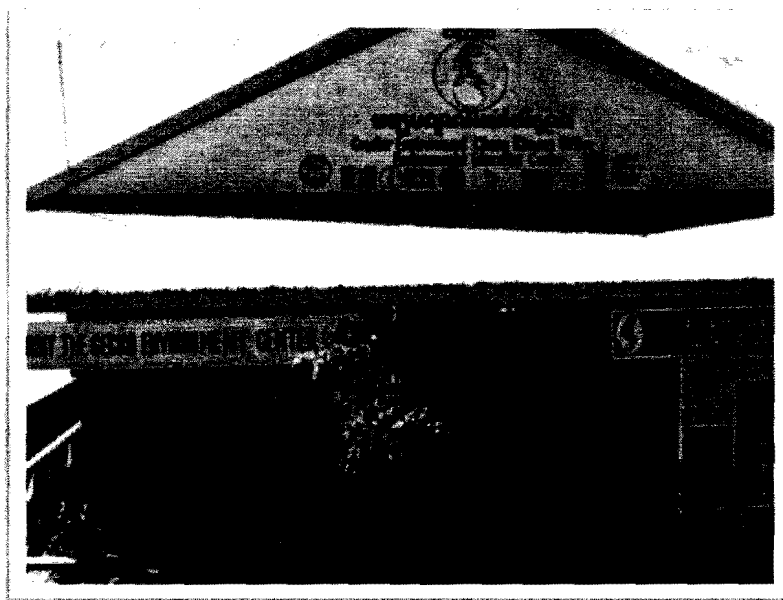
Figure 4-9 Gecko Environmental Education Centre

The first stop was at the Gecko Environmental Education Centre (see Figure 4-9). The centre is jointly operated by the Royal Government of Cambodia, the Belgium Development Cooperation, and the Food and Agriculture Organisation of the United Nations. The Gecko Centre serves both as an environmental education centre for local communities and a visitors' centre for the TSGL. The tour group that visited the TSGL at the time of the research spent about 10 minutes looking around the centre at the start of the journey to the floating villages. While tourists were reading the information on posters, a tour guide and a coordinator pointed out and explained to them the meaning of the posters (see Figure 4-10: 70). The content of the posters was mainly about the ecosystem of the TSGL and some reptiles of the lake.

Figure 4-10 Tour Guide's Explaining in Gecko Centre

The next stop was at Environmental Education Office, Peak Kantel village. After lunch in this office, the tour guide and the coordinator did a presentation for tourists. Then the tour group started a village tour. They used many different posters (see Figure 4-11: 71). The presentation was about Osmose's activities and environmental problems in the TSGL which affected fish, birds, and the ecosystem of the lake. They also told tourists about: (i) the money from the trip fee was for community development, sustainable tourism and natural resources improvement of the TSGL, (ii) the establishment of Osmose was in 1999, and (iii)) use of money by Osmose collected from tourists.

The presentation mentioned that benefits for local people were direct and indirect. Direct benefits went to some groups of villagers such as a cooking group, home-stay owners, boat operators, and boat paddlers. A cooking group was a group formed and trained by Osmose to cook for tourists. Indirect benefits included an education project and a sustainable development project.

The tour guide, coordinator and park rangers did the presentation along the trip to the bird sanctuary. They told tourists about flooded forests and the places for fish. They showed tourists different kinds of birds, flooded plants, and spoke about the roles and responsibilities of the park rangers. The tour guide showed tourists the birds and their shelters. He tells tourists about birds that have disappeared because of local people's hunting.

When tourists arrived at each stopping place or when they saw the birds, the tour guide and the coordinator presented and pointed to the posters, and answered tourists' questions. The tour guide and coordinator acted as role models – they rescued birds from the water, did not leave rubbish at the sites, but took all rubbish back to Siem Reap town. The tour guide's and coordinator's behaviors were valuable in the transmission of environmental awareness and motivation to tourists in taking care of the lake's environment.

Figure 4-11 Presentation of Coordinator (centre) and Tour Guide (right) in Peak Kantel Village

To sum up, different processes of transmitting environmental knowledge to tourists were used by Osmose. These included the tour itinerary to integrate environmental conservation information and to select target tourists to visit the sites. During the trip, Osmose used tour guides to presents to tourists, involving the use of posters in the presentations on different occasions. Tour guides informed tourists about the advantages of flooded forests for fish, endangered birds, and names of birds when they saw them at the sites.

4.8 Effective Media

The effective media were tour guides, posters, the Internet, some publications as leaflets or guidebooks, Lonely Planet, and UNESCO. According to the responses of the ten

tourists, two Osmose management officers, and two tour guides, personnel media (the tour guides), posters and the Internet were the most effective.

4.8.1 Tour Guides

The Osmose Manager and Ecotourism Coordinator demonstrated that using tour guides as media has been successful in Osmose and can reach tourists. They said tourists learn about the TSGL and the environmental problems at the destinations better than before the trip. The ten tourists, five park rangers, and three villagers expressed the same opinions about this issue. The ten tourists said tour guide gave them enough information. The tour guide spoke clearly with good English that made it easy to understand and had a good sense of humour. The five park rangers and three villagers stated that tourists learned easily from the tour guide because tour guides knew a lot about the site due to their training. Tourists were able to learn about Osmose and could ask tour guides immediately about any matters.

Moreover, tour guides were effective media because tourists think that the basic information was something new for them as they did not know about the TSGL earlier. For example, eight of them did not read books or other information sources before the trip. A book called "Southeast Asia" was distributed to all tourists before the trip. This book was written by the Pacific Discovery Tour Company about the places tourists are going to visit in Asia, including one part about Osmose, the Prek Toal Core Area and the TSGL ecosystem

However, only two tourists knew about the TSGL through some books and local people before the trip. Those books were "Cambodia now, Canby Guides and Lonely Planet". Lonely Planet reaches most tourists. One of the two said he knew of Osmose and the TSGL when he bought the package tour to visit Siem Reap town[9] in 2001. He asked people around Siem Reap about the TSGL and Osmose. Then he discussed with the Osmose Ecotourism Coordinator who developed an arrangement between Osmose and the Pacific Discovery Tour Company to bring tourists to visit the TSGL. He said it was not easy to find environmental information of the TSGL because there were not enough publications.

4.8.2 Posters

Posters were another effective media in the opinion of nine tourists, two tour

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[9] Siem Reap town is one of the most popular tourist destinations in Cambodia from where most tourists leave for the TSGL

guides, five park rangers and three villagers. Tourists liked to read these posters that were posted in places where tourists could see them. For example, some posters were posted near the entrance in the Environment Education Office. The posters and drawings had coloured pictures with clear basic information (they can be seen in the hands of the coordinator and tour guide and on the left hand side of them in Figure 4-11: 71).

To use the posters more effectively, one of the nine tourists said that tour guides should find a good time to do the presentations and should stop the presentations if they saw tourists not concentrating and/or interested. For example during the visit of the tourists, it was observed that tourists were too tired to listen after travelling a long time, and having lunch very late. The presentation started immediately after lunch. The tour started from Siem Reap town at about 11 am and arrived at the attraction around 2 pm. That is why some tourists did not listen to the presentation of the tour guide.

4.8.3 Internet

Nine of the tourists said "explanation on the website about ecotourism and the environmental conservation of the TSGL is also important." One of the nine tourists, a tour leader of the Pacific Discovery Tour Company, thought that the persons who wanted to help Osmose would like to read detailed information on the website, especially about the environmental problems, conservation of Osmose, and use of money from tourists. Even though the Osmose package was more expensive than other tours, he believed that tourists would buy their package tours if the organization posted clear information for tourists. Only one tourist said that she did not read any information on the Internet because she thought that she received sufficient information from the books as "Cambodia now, Canby Guides and Lonely Planet." Villagers and park rangers had no idea about this issue because they never used the Internet.

4.9 Effective Messages/Contents of Media

Tourists, villagers, and park rangers had similar opinions on effective messages of the media. They all said that the messages about flora and fauna of the lake, the TSGL natural resources, endangered birds, messages of not throwing rubbish into the lake, and Osmose's work were enough for this group of tourists because the tourists had general knowledge about the environment and it was is easy for them to understand the presentation.

Five of the tourists (50%) and the villagers said environmental knowledge that the tour guides presented for them was meaningful, good, and enough for this group of tourists who did not know much about this area and the work of Osmose before the trip. The tourists who visited the sites at the time of the research were students and all received information from a tour leader of the Pacific Discovery Tour Company the night before the trip. During the trip, they got information from the tour guide. The tourists knew about different species of birds, bird protection by the government and other related NGO, fish, plants, the changing levels of water, and the flow in the TSGL in different season. The tourists also knew about the work of Osmose and the use of income for the local development program and the environmental education program. They knew about the environmental problems concerning fishing, hunting, and ecology. The tourists were also informed about the culture of local people and environmental education in Osmose. They added that they heard similar messages from those sources

Five park rangers were the other persons who commented about effective messages. They said that the messages to tourists in Osmose were sufficient for the tourists. For example, Osmose told tourists via a message on the boat not to throw rubbish into the lake. Osmose and park rangers told tourists not make noise in the bird sanctuary and the regulation of watching the birds from a distance of at least 200 meters was practiced. Osmose invited specialists (park rangers) to accompany tourists to the bird sanctuary. Moreover, boat speeds were limited in the bird sanctuary to 25 to 30 kilometers per hour in the core area and to 10 to 25 kilometers per hour when in the bird zone (near the birds' nests). These regulations were also practiced by Osmose, said park rangers.

4.10 Effective Processes

Osmose used different processes of transmitting environmental knowledge to the tourists. In the pre-trip phase, Osmose used the Internet and distributed some publications such as magazines to some tour companies. During the trip, Osmose used its own tour guides, posters and a guidebook to spread information to tourists.

Firstly, Osmose used the Internet before the trip. Its purpose was to inform tourists about Osmose's activities, the ecotourism project, and Osmose's needs for responsible tourists to visit the tourist sites. Osmose believed that spreading information through the Internet was not

very effective because tourists only read about the site and the price. Tourists and tour guides believed that spreading information on the Internet was important because tourists knew about activities of ecotourism in Osmose and how they should behave at the tourist sites. The Internet could help tourists to learn about the sites.

Secondly, Osmose used some publications as magazines, books, booklets, and leaflets before the trip but these materials were only distributed to a few tour companies. This explained why tourists had difficulty finding Osmose publications in the tour companies, hotels, or restaurants in and outside Cambodia. Some of the publications were in Osmose's office but the materials did not reach all target tourists and Osmose did not get feedback from readers quickly.

Thirdly, Osmose used own tour guides and posters as well as a guidebook to spread information to promote and persuade tourists about the conservation of the site during the trip. There were two reasons for using these materials during the trip. The presentation of the tour guide was to provide the information to tourists and a poster on the boat was to persuade tourists about environmental conservation. The ways of spreading information by the tour guides during the trip were: 1) tour guides gathered all tourists to sit and then started the presentation 2) tour guides explained to tourists when they saw birds or trees at the sites.

Osmose, tourists, tour guides, villagers and park rangers believed that the third process, the use of tour guides and posters, was the most effective because it reached the right target group, communicated clearly with tourists, and received quick feedback from them. But tourists and tour guides believed that the spread of information by Osmose in the pre-trip phase by the use of the Internet was also an effective process. It was the first source of knowledge for tourists. In all, pre-trip and during the trip activities as mentioned above were the most effective processes of transmitting environmental knowledge.

Another process during the trip that park rangers and villagers as well as tour guides did was reacting to problems. When they saw tourists behave wrongly in relation to the environment, such as throwing rubbish into the lake or making noise at the bird sanctuary, they informed the tourists immediately not to do so. These activities were re-active to the problems.

4.11 Respondents' Recommendations to Improve the Work of Osmose

4.11.1 Effective Media

Tourists had some additional opinions about media. They said the media that Osmose used were good for tourists and they added some ideas to help Osmose spread environmental knowledge to tourists more effectively. The tourists' opinions had two main points.

Firstly, Osmose should have a tour itinerary with a short description to hand to tourists. Its content should have details about what tourists do on bird trip and where they visit in the TSGL.

Secondly, Osmose should give some leaflets to tourists before and during the trip. The Pacific Discovery Tour Company offered a guidebook to tourists but five of them did not read it and they thought that the other tourists did not read it too. So, additional materials to develop the tourists' awareness of the environment were needed. The tourists suggested that Osmose should have leaflets with coloured pictures and some general information for tourists to carry and read before the trip, during the trip, and during presentations.

An alternative way to save paper is for Osmose to laminate the leaflets and distribute them to tourists during the trip and the materials should be collected at the end of the trip for re-use. These materials could be as games. For instance, let tourists tick pictures of birds that they see at the sites. Then, Osmose could check them afterwards to find out who get the most pictures and declare them the winner.

4.11.2 Effective Messages

Osmose should not only tell tourists about the uniqueness of attractions but also about the environmental awareness information and encourage them to take part in environmental conservation. The information for tourists should be about the pollution of the lake, endangered birds, and some way in which tourists can help in these problem areas. The content in the posters and in the presentations should be more detailed than that used by Osmose during the research.

4.11.3 Effective Processes

The tourists suggested Osmose give leaflets or booklets about environmental conservation to tour companies, tour operators inside and outside Cambodia, hotels, and guesthouses. The tour companies that had a contract with Osmose to bring tourists to see the

TSGL could give out some leaflets or booklets about environmental conservation. The leaflets or booklets could be delivered to tourists at the hotels or guesthouses. This process could attract backpackers who often do not have a fixed schedule to visit any attractions. When they see interesting places in the leaflets at the hotels, they may decide to visit those places. The tour leader said guesthouses and hotels in Siem Reap, Phnom Penh, and trekking companies would be appropriate places to transmit the information to tourists. Written information should be put in other places that tourists can see such as behind Tuk Tuks[10] (motorbike taxis) and at night markets in Siem Reap.

4.12 Chapter Summary

The main findings of the study were that transmitting environmental awareness to tourists is important for implementing ecotourism. Osmose used different media including direct and indirect processes to tourists. The direct processes were presentations by tour guides about the environmental conservation and Omsose activities involving tourists. In the presentations, some small posters with colored pictures were used and other different media existed at the sites and in the Osmose office, for example, posters about Do's and Don'ts and paintings about flora and fauna of the lake. The media and messages made tourists know about the environmental problems, the richness of the natural resources of the TSGL, Osmose activities, endangered birds and fish species, what tourists can do and cannot do at the bird sanctuary, and culture and tradition of the local people.

The processes of transmitting environmental knowledge to tourists had two steps, pre-trip phase and during the trip. To reach tourists before the trip, Osmose used the Internet to tell tourists about what kinds of tourists Osmose needs and some activities about ecotourism. During the trip, Osmose brought tourists to see many materials in three different offices. Tourists visited the environment of the floating villagers and the bird sanctuary in the Prek Toal Core Area and listened to the presentations of the tour guides. All these activities and materials informed tourists about the conservation efforts of Osmose and encouraged them to participate.

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[10] Tuk Tuk is a kind of motorbike taxi that has 4 wheels and a roof.

The tour guides, posters and the Internet were the most effective media according to the similar opinions of the ten tourists, two Osmose management officers, two tour guides, five park rangers, and three villagers. The messages about flora and fauna of the lake, the TSGL natural resources, endangered birds, messages about not throwing rubbish into the lake, and Osmose's work were adequate for this group of tourists. The most effective processes of spreading the environmental knowledge to tourists were in the pre-trip phase and during the trip. Before the trip, Osmose used the indirect process of the Internet. During the trip, Osmose used the direct processes of tour guides, posters, and a guidebook. The tour guides spread information to the tourists by gathering them at the Osmose office and making explanations when they saw birds or trees at the sites.

CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter is divided into seven sections. The first section outlines the aims and processes of collecting data for the study. The second section describes the summary of results and is followed by section 3 dealing with the discussion. The discussion is organized in line with the research questions and research objectives, and links these to the literature review and the laws of the Kingdom of Cambodia. The results of this study are compared to those of previous research. The fourth section outlines the benefits of the study and section five addresses the limitations of the study. The sixth section makes recommendations for Osmose, GO, and future research. This chapter ends with section seven, the conclusion of the study.

5.1 Aims and Processes of the Study

This study aimed to: (i) explore types of media and the messages used in each media (ii) explore the processes of transmitting knowledge of protecting the environment to tourists (iii) investigate the effective media, knowledge types and processes as considered by tourists.

There is limited published research of environmental awareness transmitted to tourists in the TSGL or in Cambodia. Osmose is a relatively new ecotourism project and does not have much operational experience and needs collaboration and support from the MoT and the MoE to issue regulations related to tourists' behavior and/or on ecotourism implementation in the TSGL. The organization also needs cooperation from other tour operators and companies that operate within the TSGL area so that environmental awareness is implemented with all tourists.

The study had five processes in the collection of data (see Table 5-1: 80). These were:

(1) unstructured interviews with the Manager and Coordinator of Osmose regarding the topic and the organization. The researcher also conducted discussions at this stage with academic advisors and lecturers.

(2) unstructured interviews with government officials

(3) semi-structured interviews with the Manager and Coordinator in relation to the study's research objectives. At this stage documentary research was completed

(4) semi-structured interviews with individual and groups of tourists

(5) semi-structured interviews with tour guides, park rangers, and villagers

Table 5-1 Processes of the Study

Steps	Activities
1.	Unstructured interviews with the Manager and Ecotourism Coordinator of Osmose to see how this organization worked to identify a research topic. The researcher had discussions with advisor and lecturers about research topic and objectives.
2.	Unstructured interviews with the government officers of MoT, PDoT, and PDoE to find out about the laws and the regulations for implementing ecotourism.
3.	Semi-structured interviews with the Manager and the Coordinator to answer the research objectives. Documents were also collected at that time.
4.	Individual and group semi-structured interviews with tourists. In the interview phase, observations of tourists' behavior towards the environment were also completed
5.	Semi-structured interviews with 2 tour guides, 5 park rangers, and 3 villagers.

5.2 Summary of Results

Media

The results of this research demonstrated that Osmose used personnel, printed media, and painted media to distribute information about the environment. The personnel were tour guides, park rangers, and villagers. The printed media were of two types, that which was sold and that which was free. The media for sale consisted of posters, magazines, books, and booklets. The free media included the Internet, leaflets, newsletters, big banners, and paintings. Some media were distributed during the visit and some at other locations or on other occasions. The content of the media was mainly about flora and fauna of the lake, different kinds of endangered birds and

other species in the lake, Dos and Don'ts, the richness of the TSGL natural resources, and the work of Osmose.

Processes of Transmitting Knowledge

The processes of transmitting environmental knowledge to tourists occurred in the pre-trip phase and during the trip. To reach tourists in the pre-trip phase, Osmose used the Internet to tell tourists about the kinds of tourists Osmose needed and some activities about ecotourism. Osmose also distributed some publications such as magazines, books, booklets, and leaflets to some tour companies, especially the companies from inside and outside of Cambodia that had a contract with Osmose to bring tourists to visit the TSGL.

During the trip, Osmose brought tourists to many different places including the floating villagers and the bird sanctuary in the Prek Toal Core Area, and tourists listened to presentations by the tour guides. All these activities and materials for tourists allowed them to learn about the environmental conservation work of Osmose.

Effective Media and Messages

It was found that the effective media were tour guides, posters, the Internet, some publications such as leaflets and guidebooks, Lonely Planet, and UNESCO. The tour guides, posters and the Internet were the most effective media according to the ten tourists, two Osmose management officers, and two tour guides.

Tourists, villagers, and park rangers expressed similar opinions about the effective messages of the media. They all said that the messages about flora and fauna of the lake, the TSGL natural resources, endangered birds, messages regarding correct disposal of rubbish, and the work of Osmose were appropriate for this group of tourists.

Effective Processes

Tourists and tour guides indicated that the distribution of information by Osmose in the pre-trip phase by the use of the Internet and printed materials were the effective processes. However, the Osmose management team, tourists, tourist guides, villagers and park rangers believed that the effective processes of spreading environmental knowledge to tourists was by activities in the pre-trip phase and during the trip. Osmose spreading information during the trip directly to tourists by using tour guides, posters and guidebooks, were the effective processes, because spreading information during the trip reached the right target tourists, communicated

clearly with them, and received quick feedback. The ways of spreading information during the trip involved tour guides making presentations to the tourists, and by making explanations at the sites related to birds and/or trees being viewed.

Tour guides, park rangers and villagers believed that the process of reacting to problems during the trip was also effective. When they saw tourists behave badly to the environment, such as throwing rubbish into the lake or making a noise at the bird sanctuary, they acted as role models and behaved correctly.

5.3 Discussion

This section is divided into six parts: media, messages, processes of transmitting environmental knowledge, the effective media, the effective messages, and the effective processes.

5.3.1 Media

The findings indicated that media used by Osmose were personnel, the Internet, and printed media. The personnel were tour guides, park rangers, and villagers. The printed media were posters, leaflets, booklets, newsletters, big banners, paintings, pictures, drawings, guidebooks, and the Internet. These findings are similar to those of Seaton and Bennett (1996), Kotler et al. (2006), and Oelkers (2007) who identified the use of written publications, broadcast, electronic and outdoor media:

(1) Written publications - guidebooks, magazines, booklets, brochures, leaflets, pictures and posters. Swarbrooke (1999) nominated guidebooks as the media relevant to sustainable tourism.

(2) Broadcast media - tour guide's presentations.

(3) Electronic media - environmental conservation information and information about the work of Osmose on the organization's website[11].

(4) Outdoor media - wall pictures, paintings and posters displayed at the attractions and on the boat.

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[11] Osmose website: http://www.osmosetonlesap.net/www/english/accueil.php

Osmose used personnel, such as tour guides, park rangers, villagers, the Internet, big and small posters, paintings, and banners to transmit information to tourists during the tourists' visits. These media are also found in the work of Seaton and Bennett (1996) and Kotler et al. (2006). The use of personnel by Osmose is similar to personal selling in the promotional mix of marketing theory (Ralph and Richard, 1995; Peter J.P. and Donnelly,Jr. J.H., 2001; Kaser and Freeman, 2002; Walker & Lundberg, 2005).

Despite some similarities in the use of media for sustainable tourism and for advertising, there are also a number of differences. Media, such as local and international press, radio, television, telephones, and journals used to promote sustainable tourism in the case study of Direct Holiday, UK and Thomas Cook, cited in Seaton and Bennet (1996), Swarbrooke (1999) were not found in this study of Osmose. This is probably because that Osmose was a small, non-profit organization with limited resources targeting foreign tourists.

Another issue to be considered is the target group. The Osmose Manager said most of the environemtal problems in the TSGL happened because of the local Cambodian people. The researcher observered that a number of Cambodian tourists were also visiting the TSGL at the time of the research, but these tourists did not buy the package tours of Osmose. The organization did not have appropriate media with which to target Cambodian tourists. Mareth (2003) identified radio, television, videos, and cultural events as the most effective methods of media to reach a wider audience, including this group of local tourists.

5.3.2 Messages

Osmose informed tourists with messages about flora and fauna of the lake, endangered birds, work of Osmose, the need for responsible tourists to visit the sites, history of the floating villages, and Dos and Don'ts through a variety of media used by tour guides (see sections 4.5 and 4.6). These messages provided basic knowledge for tourists about the natural resources of the lake, how tourists should behave at the sites, and the conservation work of Osmose. The messages are similar to previous research. Luo Y. and Deng J. (2008) found that information to the public should be about the attractions of the site, education and interpretation should be emphasized by tour guides as a means of reinforcing or visitors' environmental concern. UNWTO (2004); Swarbrooke (1999) stated that messages about sustainable tourism should raise tourists' awareness about sustainability issues and promote its practice amongst

tourists. The laws of the Kingdom of Cambodia also mentioned about taking care of natural resources.

5.3.3 Processes of Transmitting Environmental Knowledge

The activities of Osmose in the pre-trip phase were part of an indirect process. In the pre-trip phase, Osmose informed tourists of the type of tourists Osmose needed and the ecotourism activities of the organization. Osmose also distributed publications to tour companies. The purpose of these pre-trip initiatives was to inform tourists about the sites and the work of the organization. This is similar to the work of Kotler et al. (2006); Middle and Hawkins (1998) that showed that the distribution channels have key functions for transmitting information.

During the trip, Osmose brought tourists to see the many sites and the materials of the organization , and the tour guides made presentations to the tourists. These direct process approaches meant that tourists learnt about the TSGL on different occasions and in different ways. These findings support those of Seaton and Bennett (1996); Kotler et al. (2006) regarding companies' direct and indirect contact with customers.

5.3.4 Effective Media

The key informants of the study expressed their views that the effective media in Osmose were tour guides, posters, the Internet, and publications such as leaflets and guidebooks, Lonely Planet, and UNESCO. These media can used according to the times, places, and situation of receivers. The findings of Seaton and Bennett (1996) about the effectiveness of using media were similar to Morgan (1996); Oelkers (2007). These were based on five factors related to:

(1) Who are the target tourists?

(2) Cost of media

(3) Total number of tourists who see the advertisement

(4) Total number of times that the target tourists see or hear the advertisement

(5) Time needed to prepare the advertisement

Osmose used a variety of media, such as personnel and printed media, to transmit environmental knowledge to tourists. This approach is in accord with the findings of Ralph and Richard (1995); Peter J.P. and Donnelly,Jr. J.H. (2001); Kaser and Freeman (2002), Walker and Lundberg (2005); Reid and Bojanic (2010) who demonstrated that business must have

a varied promotional mix and should choose the right one to use to make customers aware of the product or service.

The use of tour guides as a form of personnel media in Osmose is similar to that of Ralph and Richard (1995); Peter J.P. and Donnelly,Jr. J.H. (2001) who illustrated the advantages of personal selling in making effective relationships and providing opportunities to persuade customers, give information to customers, and receive quick responses. Tour guides were the effective media because of their good English and sense of humor. The studies of Luo Y. and Deng J. (2008); Aphirom and Jean (n.d) mentioned that education in ecotourism should be a mixture of education and entertainment to suit the clientele and the curriculum should be innovative.

The posters were also effective media, reaching the right group, and being less expensive and less time-consuming to produce because Osmose prepared them once and used them many times. Seaton and Bennett (1996) had a similar idea, stating that the media must reach the tourists and be time efficient.

The Internet was also an effective medium. Osmose used this form of media because it reached many tourists world-wide. Seaton and Bennett (1996); Kotler et al. (2006) recognized that the Internet or IT has become a fact of life for the travel industry.

5.3.5 Effective Messages

The messages about flora and fauna of the lake, the TSGL natural resources, endangered birds, messages about correct waste disposal, and the work of Osmose were appropriate for the group of tourists. The findings of this study indicated that the tourists were satisfied with these messages because they gave basic and new knowledge about the TSGL and appropriate actions for involvement in environmental conservation. The findings about the messages are in accord with those of Oelkers (2007) who stated that, "three of the most effective words in media are *new, easy* and *results.*" Oelkers (2007) also mentioned, "messages should communicate with the target tourists."

Osmose followed the regulations in bringing tourists to the bird sanctuary. The regulations related to bird viewing distances and speeds of boats. These distances were set at 200 meters and speeds of boats were controlled at 25 to 30 kilometers per hour in the core area,

and 10 to 25 kilometers per hour in the bird zone near the nests. These regulations are in accord with the study of Bonheur (2003) and the laws of the Kingdom of Cambodia.

The content of posters, banners, and magazines in Osmose were mainly about flora and fauna of the lake, endangered species, Dos and Don'ts, and activities related to environmental conservation. The laws of the MoT, the MoE, and the MoAFF related to the development of long-term protection, conservation of natural resources and the ecosystem, preservation of wildlife, fish and aquatic resources, minimization of water pollution, control of pollution, good management and conservation of natural resources, and improvement of biological diversity and the ecological system of the TSGL. This showed Osmose operating as an ecotourism organization in agreement with the messages given by the laws of government agencies.

Messages on the Internet included, "The tours are ideal for people with an interest in nature and responsible tourism," and "Osmose proposes you a relaxing but educative visit which will enable you to understand the ecological and human aspects of the TSGL." This illustrated that Osmose was keen on the selection of appropriate tourists to visit the sites. Such an approach supports the findings of Luo Y. and Deng J. (2008) that showed one of the activities for ecotourism in the longer term is the identification and segmentation of eco-tourists to visit the sites.

Messages about tourists' particiaption in environmental conservation included, *"Rubbish bin, Help to Clean Our Lake"* on the boat, and *"Do's and Don'ts"* in the Core Area Management Centre. These messages support the results of the study of Luo Y. and Deng J. (2008) who found that the site functions better if properly protected through the efforts of all people, including the visitors themselves.

5.3.6 Effective Processes

The effective processes of spreading environmental knowledge to tourists were activities in the pre-trip phase and during the trip. In the pre-trip phase, Osmose used the Internet and distributed publications such as magazines and leaflets to tour companies. During the trip, Osmose used its own tour guides, posters, and a guidebook to spread information to the tourists. The pre-trip process was indirect contact with the tourists. During the trip, the contact was direct with the tourists. The two processes in Osmose are in accord with the views of Kotler et al.

(2006); Seaton and Bennett (1996) who stated that contact can be made either directly to tourists or indirectly through intermediaries.

During the trip, tourists were involved in the process of knowledge acquisition. For example, tourists listened to the presentation of the tour guides and asked questions. This process is similar to the work of Kaser and Freeman (2002); Walker and Lundberg (2005); Reid and Bojanic (2010) who described that the marketing of services needs involvement from customers in a production process.

Another process during the trip that tour guides, park rangers and villagers used was reacting to a problem. When they saw tourists behave inappropriately to the environment, such as throwing rubbish into the lake or making noises at the bird sanctuary, they acted as role models and behaved correctly for tourists. These were re-active solutions to the problems. However, Osmose was pro-active in its attitude to problems as it made efforts before and during the visits of tourists to encourage responsible behavior to the environment. This is in accord with the views of Swarbrooke (1999) who believed that environmental conservation should be pro-active.

5.4 Benefits of the Study

The findings of this study have benefits for Osmose, GO, and other tour companies that are involved in ecotourism. These are:

(1) this study informs Osmose about the most effective media, messages, and processes of transmitting environmental knowledge to tourists so that the organization can use them effectively in its implementation of ecotourism in the TSGL.

(2) this study encourages Osmose and other tour companies who bring tourists to the bird sanctuary in the TSGL by boats of the Core Area Environmental Management Centre to discuss with the Centre, PDoE, and PDoT about the noise levels of boat engines.

(3) this study shows MoE, the body responsible for the protection of the environment in the TSGL, and the Core Area Environmental Management Centre that media and messages play an important role in environmental conservation of the tourist sites.

(4) this study provides a lesson for other tour companies about the effective media, messages, and processes as used by Osmose. Those companies may then use this knowledge in their own companies.

5.5 Limitations of the Study

The study of Bonheur (2003) suggested that to achieve sustainable tourism, all tour operators and government institutions should cooperate in implementing ecotourism in the TSGL. This study involved the operations of one organization but there were at least four other tour operators who brought tourists to the TSGL (see Table 1.3). Action needs to involve all organizations as Osmose cannot work alone to accomplish the environmental awareness of tourists and ecotourism.

The present research investigated the perceptions of tourists from America and New Zealand. These perceptions may not be the same for tourists of other nationalities. The study of Hathaitat (2007) found that Westerners are more environmentally friendly than Asian tourists who usually make loud noise at the attractions. This finding suggests that there is a need for effective education about the environment for Asian nationals.

The respondents in this research were limited to one group of tourists. This was because the members of the group were able to communicate with the researcher in English. Other tourist groups in the TSGL at the time of this research were from France and Korea and the researcher did not interviewed these groups as part of the study as they did not speak English or Khmer.

5.6 Recommendations

Recommendations are made in three parts. The first part is recommendations of the respondents on how this study can improve the work of Osmose and related GO. The second is the recommendations of the researcher. The final part is recommendations regarding the use of the results of the study as a platform for future tourism research.

5.6.1 Respondents' Recommendations

5.6.1.1 Osmose should reduce and reuse items that have a negative impact on the environment. For example, Osmose should pack food in reusable containers instead of using plastic bags or rice boxes and use a big bottle of water to refill smaller bottles.

5.6.1.2 Osmose should discuss with the Prek Toal Core Area Management Centre or PoDE about the use of boat engines with low levels of noise to bring tourists to the bird sanctuary.

5.6.1.3 To involve tourists in environmental conservation, Osmose should let tourists see the real activities of villagers and include them in villagers' activities. For example, Osmose should set up some programs for tourists such as cutting water hyacinth with local people to make mats or baskets, collect waste with local people, organize boat-racing with tourists and villagers, and using traditional fishing tools.

5.6.2 Researcher's Recommendations

Based on the findings of the study and comparisons with the concepts in the literature review, the researcher makes the following recommendations to Osmose, GO, and related stakeholders:

5.6.2.1 The message of "Do's and Don'ts" in the Prek Toal Core Area Management Centre is a good method of showing tourists how to behave at the bird sanctuary. So this message should be put in more places so that tourists can see it more often than just in the centre. There is also a need for information boards to make foreign and local tourists aware of the environment. The information boards should mention about *"Do's and Don'ts of tourists, and what tourists can contribute for ecotourism in this area."* This work needs collaboration between Osmose, the Prek Toal Core Area Management Centre, PDoE, and other tour companies.

5.6.2.2 PDoT and the Core Area Management Centre should take a leading role to facilitate and motivate all tour companies and tour operators that bring tourists to the TSGL to work together to set an action plan on ecotourism activities. They should formulate a steering committee and have regular meetings. Osmose working alone on ecotourism is not enough for the long-term perspective.

5.6.2.3 All tour companies, related stakeholders in the TSGL, and Osmose

should have appropriate media for local tourists who visit the TSGL but do not use package tours. Radio, television, videos, cultural events and information signs at the sites can be useful media.

5.6.3 Future Research

The study suggests some avenues for future research. These include:

5.6.3.1 Future research should be undertaken in the TSGL on economic efficiency and social equity, the other two factors of sustainable tourism in the theory of Swarbrooke (1999) mentioned in Figure 2-1.

5.6.3.2 Future research should explore the same objectives, but should find out the perceptions of many other nationalities of tourists, especially Asian tourists, towards the environment. The study can be in the TSGL or in other areas in Cambodia that are implementing ecotourism, such as Virachey National Park and Sre Pok Wilderness Area in northeastern Cambodia. This would allow the drawing of conclusions about the most effective media, messages and processes to use throughout Cambodia or could provide lessons and/or models for other countries.

5.7 Conclusion

This thesis found that Osmose implemented ecotourism activities appropriately in the TSGL in relation to ecotourism theory and the environmental laws of the Kingdom of Cambodia. The organization used a variety of media and effective processes to disseminate information about environmental conservation in the TSGL to tourists. The actions of Osmose are commendable and a continuation of this work with a supplementary focus on raising the environmental awareness of local tourists in the future is in the best interests of sustainable tourism at local and national levels.

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APPENDIXES

Appendix A

Map of the Prek Toal Core Area

- **Map of the Prek Toal Core Area, Adapted from Ministry of Environment**

Appendix B

Map of Sangke River, Connected to TSGL

Map of Sangke River, Connected to TSGL, Adapted from Osmose
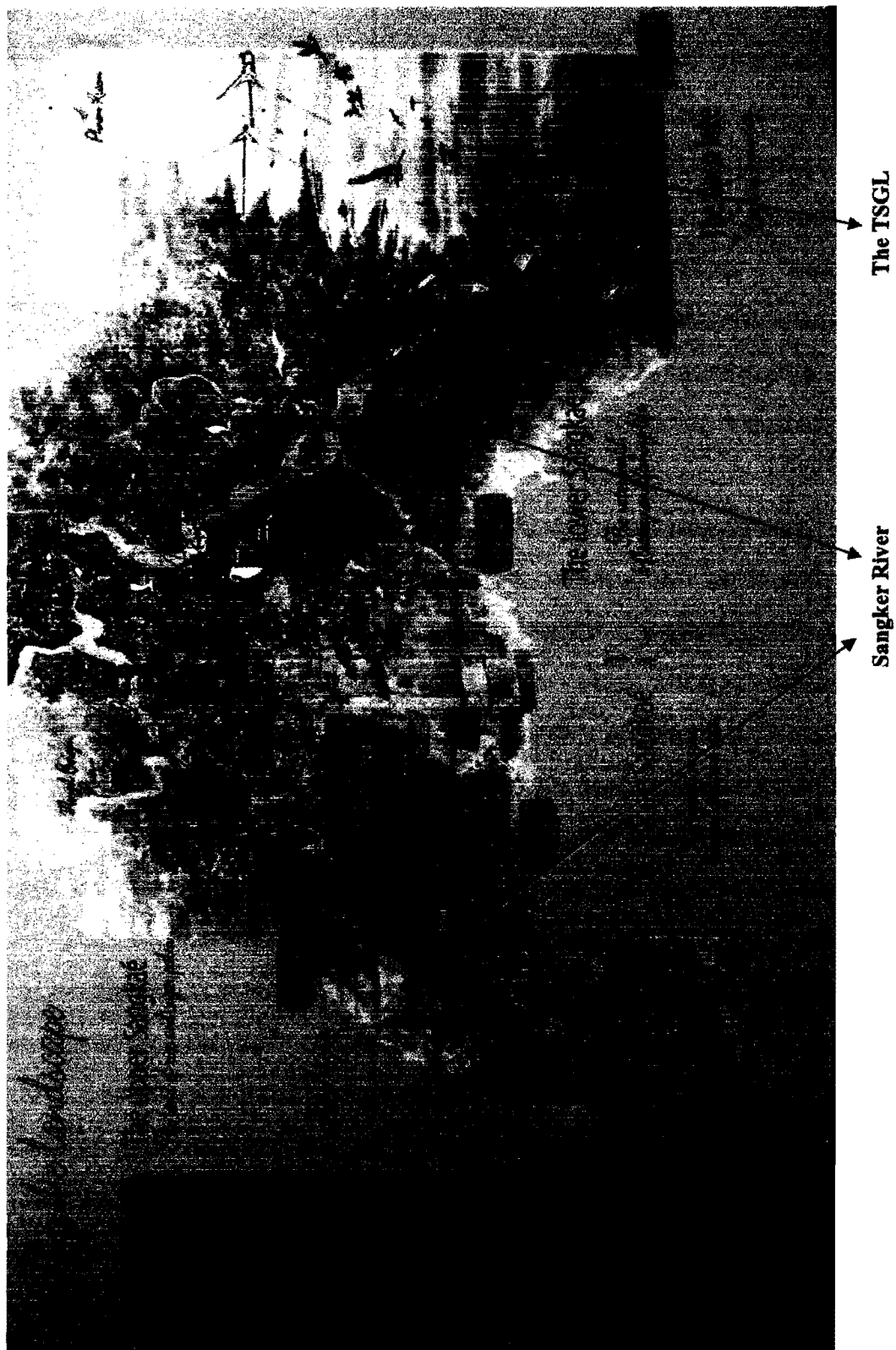
Appendix C

Questions for Manager and Ecotourism Coordinator

Questions for Manager and Ecotourism Coordinator

1. What are the media that you use to transmit environmental knowledge to tourists?

....

....

2. What are the main messages content?

....

....

3. What basis do you use to develop messages?

....

....

4. How does Osmose make tourists aware the environment of the TSGL?

....

....

5. When do you spread this information to tourists? Where? Why?

....

....

6. Who is responsible to tell tourists about environmental conservation?

....

....

7. How often does Osmose train tour guides? Why? By whom?

....

....

8. What is it about?

....

....

Appendix D

Questions for Tourists, Tour Guides, Park Rangers, and Villagers

Questions for Tourists, Tour Guides, Park Rangers, and Villagers

I.   Self introduction to respondents

As a Master program student of tourism in Ubon Ratchathanee University, Thailand. I am conducting a research on "The role of non-government organization in environmental awareness and ecotourism in the Tonle Sap Great Lake, Cambodia: A case study of Osmose organization". The knowledge that you bring to this study will be very useful for Osmose to improve service for tourists and preserve the environment. I give you my words that all the information obtained from you will be kept confidentially. I thank you in advance for your precious collaboration.

II.   Key Questions

1. Do you get any information about environment of the TSGL?

....

....

2. If yes, what is it about?

....

....

3. Which media do you get the information?

....

....

4. How do you get the message? (processes)

....

....

5. What do you think the knowledge that you get from Osmose? (Good or bad?) Why?

....

....

6. Do you think which media is the effective and reach most public?

....

....

7. What do you think the media that Osmose uses to inform public? (Good or bad?) Why?

....

....

8. What are the effective processes for you of getting this information?

....

....

9. What do you think about the processes that Osmose delivers the information to you? (Good or bad?) Why?

....

....

10. What recommendation can you suggest to develop and conserve the environment of the TSGL for the benefit of ecotourism?

....

....

Appendix E

Answers from Tourists

Answers from Tourists

I. First interviewee

- She does not know much about the Tonle Sap

- She only gets information from tour leader who told her and other tourists on the night before the trip starts. She knows that the TSGL has different species of birds, fish and plants, level of water changes and water expands during wed season (water flow).

- Every body gets the book, which was prepared by the tour company, about the places to visit in Asia.

- She does not think that every body read that book and know much about environmental conservation of the lake before the trip

II. Second interviewees (Ms. Leo, a trained tour leader)

- She gets information from tour leader and from some books: Cambodia now, Lonely Planet and Canby Guides. She thinks that Lonely Planet reaches most tourists.

- She does not read information in internet because she thinks that these books have enough information.

- The effective process of spreading the information:

  o Tourists should read books or other sources before the trip

  o Only presentation is not enough, because tourists are tired to listen during the trip. And it is too much information. She said that she observes some tourists feel sleepy and some did other things during the presentation of tour guide. She suggests tour guides that when they see listeners are tied, tour guides should stop and tell them in other time.

  o Before the tour starts, tourists should be informed about the environment of the TSGL. For example, when tourists buy ticket tour from a tour company, they should be given some leaflets about environmental conservation information of the TSGL. So Osmose should give these leaflets to the tour companies. Then it is good during the presentation of tour guides. Then the information during the trip is only for reminding what tourists have heard and seen.

o The tour company (Pacific Discovery) prints out a book which was written about the places to visit (title is: Southeast Asia). It was written about Osmose, and Prek Toal Core Area for one page. This book was distributed to all tourists before the trip. The interviewee does not think all tourists read it. Then she suggested that Osmose should print leaflets or posters with some main information and some colour pictures for tourists to hold and read before and/or during the trip as well as during the presentation of the tour guides.

o To save paper in producing the leaflets, Osmose can laminate them and give them to tourists to read during the presentation and during the trip. This material can be collected back to use latter.

- Some suggestions to develop and conserve the TSGL are:

o Use a big bottle of drinking water for tourists. Should not use small bottle of water.

o Not only tourists but also local people need to preserve the environment of the TSGL

o The local people should raise own voice about environmental conservation.

o Education is very important

o Play games with tourists to increase environmental awareness among them. For example, let tourists tick pictures of bird that they see during the visit. The picture will be prepared by Osmose.

o Boat engine is very loud to approach bird sanctuary. Osmose should discuss with Prek Toal Core Area Management Centre to find low sound of boat engine.

III. Fourth interviewee (Mr. Scot, a tour leader)

- He gets to know Osmose when he brought tourists to visit Siem Reap in 2001, by asking people around Siem Reap province. He discussed with Osmose ecotourism coordinator and developed a contract to bring tourists until today.

- He also reads books about the TSGL.

- It is not easy for him to find information about environment in the TSGL because there are not enough publications. So he suggests Osmose to spread more information by suing different media. Publication is good for Osmose, he said.

- Osmose can put the publication in hotels or guesthouses to promote environmental awareness to tourists, or to promote the TSGL. The hotels or guesthouses would,

especially, attract backpack tourists. This kind of tourists has no strict schedule to visit any attractions. When they see things interesting from leaflets in the hotels they would go. The backpackers should be explained well and clearly where the money goes because package tour of Osmose tour is more expensive than other companies.

- Advertisement about environment conservation can be at night market in Siem Reap town. This place attracts many tourists.

- Osmose should contact other companies outside Cambodia to tell about the work and the attraction.

- The effective processes of getting information about the environmental conservation:
  o The presentation of Osmose is good to do for tourists
  o Explanation in website about ecotourism is also important. He thinks that the person, who wants to help Osmose, would like to read information in website of Osmose.

- Suggestion to develop and conserve the TSGL: written information as leaflets, posters, booklets, etc. about environmental conservation are important for tourists.

- He thinks this tour obtain enough information about the environmental conservation of the TSGL. He thinks other tour group might need more information.

- As tour company or tour guide should inform tourists to behave well during the trip if they respect to the environment of the sites. We should not afraid of tourists' dissatisfaction if we do something in order to be benefit for the society.

IV. Fifth interviewee (Ms. Jillian Forte)

- She does not know much about environmental conservation of TSGL.

- She only gets information from tour leader about environmental education of Osmose, the lake, water flow from Mekong River.

- She has not seen much about environmental conservation related to tourism.

- Osmose should give this information to hotels, guesthouses so that the information would be delivered to tourists. What is more, the information can posted any place that tourists can see, such as behind TUK TUK (motorbike taxi).

- Osmose should tell tourists about the pollution, and some solution that tourists can help on endangered bird species.

- Osmose should have tour itinerary for tourists (what tourists have to do on bird trip)

- She thinks it is very effective of using posters and presentation of tour guides to tourists about Osmose's work and environmental conservation during the trip.
- She wants this place not to be damaged by tourists. It should be clean place, and sustainable tourism.

V. Sixth interviewee (Mr. David)

- David is American but he is from Korea
- He does not know much about the environmental protection in the TSGL
- He Knows about Osomse's work such as the money usage from tourism for local development, work of environmental education (the information which is similar to the tour guide's presentation)
- Besides, he prefers to know more on how villagers move in dry and wed season
- The effective way of transmitting the information to tourists are: the Internet, posters, and presentation
- The information that tour guide tell tourists is meaningful and good
- Using posters is a good medium
- He thinks the knowledge types, media (presentation), and processes of transmitting environmental conservation are good.

VI. Seventh and Eighth interviewees (group discussion, a man and a woman), Group discussion during village visit

- They do not know much about the TSGL and its environmental conservation.
- They get basic information from tour leader a night before the trip.
- They get more detail information about the TSGL from guide book, Lonely Planet
- The most effective media are the Internet, posters, presentation, and Lonely Planet

VII. Ninth and Tenth interviewees (Hillary and Jim), Group discussion during dinner

- They get information about the TSGL from tour leader:
  o Environmental problem, over fishing, over hunting, and ecology
  o They are told that one small organization is working and helping people in this area.
  o Culture of local people

- The effective media of transmitting the information are guide books publication, Lonely Planet, UNESCO, Government publication, guesthouses in Siem Reap and Phnom Pehn, trekking company.

- They think the knowledge types, media, and processes that they get from Osmose are good. Tour guides have good English, enough basic information and it is good for tourists who do not know much about this area, and about the work of Osmose. The woman also said that it is good that Osmose works in different programme

- Some suggestions on environmental conservation are:

  o Osmose should use only one reuse water bottle for each person and refill from a big tank of water

  o Tell tourists about the environmental conservation through different media as leaflets, guidebooks, posters, etc.

  o Recycle things if possible

  o Educate children at school

Appendix F

Additional Information from Other Key Informants

Additional Information from Other Key Informants

I. Ecotourism coordinator

- He expresses some ideas as bellow:

   o Inform tourists not to through rubbish into water

   o Do the presentation about Osmose's work (Inform tourists only the activities that Osmose does) and the environmental threat to the lake so that tourists involve and aware of environmental protection

   o Osmose plans to use one big bottle of water for each tourist and reuse small bottle to fill from big tank. On each bottle will be stuck different bird pictures)

- Some suggestions to develop and conserve the environment:

   o Collect waste together with tourists

   o Cut water hyacinth together with tourists to make mates, baskets, etc.

   o Boat racing between tourists and villagers

   o Tourists do the fishing by using traditional fishing tools as fishing net or fishing line

   Note: Osmose can do these activities, unless tourists stay longer than one night

II. Tour guides

- To make tourists participate in the environmental conservation:

   o We should make them see the real activities of villagers

   o Need feedback from tourists

- Some suggestions to develop and conserve the TSGL:

   o Tour guides should find out more information about the TSGL, and then share this information to tourists

   o Law restriction of birds in core area was not well obeyed. There was some corruptions. So law should be strengthened.

- He said the presentation is good media to transmit the environmental conservation to tourists.

- The bird sanctuary in the Prek Toal Core Area had been protecting by Wildlife Conservation Society (CWS) organization.

- There are about 25 platforms to watch birds in this core area.

III. Group interview of 5 park rangers

- Numbers of bird have increased 10% comparing to the birds before 2001 (before the conservation project began).

- The park rangers are former of bird hunters and egg collectors.

- They get salary from the government and WCS.

- They also get 3$ from a boat of tour that he accompanied tourists to bird colonies.

- They can accompany tourists to the bird sanctuary only from October to February or March. These month have tourists come to visit the TSGL

- The activities of WCS and the park rangers in the field can decrease 90% of illegal bird collection

- Park rangers' responsibilities are: to monitor the breeding bird colonies, protect, count birds.

- One person work half month on the bird platform (in the field) and the other half month work in Prek Toal Core Area Management Centre. The rangers who are in the centre can accompany tourists to see birds.

- Besides, they also have more responsibilities to educate tourists not to throw rubbish into the lake, and not to make noise at the bird colonies.

- They see some tourists not respect to the environment as make noise and throw rubbish into the lake. Then they inform tourists to not to do so or behave as model.

IV. Villagers

- Villagers said Osmose inform tourists enough information.

- They see some tourists not respect to the environment as make noise and throw rubbish into the lake. Then they behave as model for tourists by picking up the rubbish.

- Using tour guides and posters to present to tourists is the most effective media.

- They have no idea about the Internet, because they have never used it.

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