ECOTOURISM DEVELOPMENT AT KHAO PHAENG MA, NAKHORN RATCHASIMA PROVINCE, NORTHEAST OF THAILAND

INTRODUCTION

A world without forest is unthinkable. Yet the world's forests are disappearing at an increasing pace. It is the tropical forests (mostly in the Asia-Pacific) that are being so rapidly destroyed. The estimated rate of forest depletion in the tropical zone in the decade 1990 to 2000 was 12.3 million hectares per year (FAO, 2001). The large scale loss of natural forest threatens the loss of animal and plant species as habitats disappear. Management of the world's patrimony of forests in a rational and sustainable manner is one of the critical challenges facing the human race today. The pressures leading to the loss of forests originate mainly from outside the forestry sector, and they are certain to continue in the future (FAO, 1988b). It is essential to be realistic in tackling it. The immediate need is for constructive interventions and support for actions that will reduce damage, while laying the foundations for the stabilization and ultimate sustainable management of the remaining forests.

The tropical forest (tropical belt of Africa, Latin America, Oceania and Asia) contains the most floristically diverse habitats and the great species richness, or large number of plant species per unit area in the world. The species richness in tropical forests has ranged from 100 to over 300 tree species per hectare (Victor, 1997). Despite their coverage of only 2% of the earth's surface or 6% of its land mass (Evans, 2000), tropical forests are acknowledged to contain over 50% of the global stock of biological species (Madeley and Warnock, 1995). Such richness in biodiversity conveys a wide range of benefits at local, national and the wider global levels for human development

Furthermore, threats of irreversible deforestation in the tropics may ultimately have several global repercussions in respect to their roles as climatic regulators (Evans, 2000). Therefore, it is undoubtedly and widely accepted that the conservation of biodiversity and protection as well as maintenance of ecological integrity that is ecosystem and/or life-support system functioning which includes watershed protection, soil stabilization and the continued existence of indigenous cultures, depends mainly on the conservation of natural resources such as tropical forests, national parks and other protected areas.

Forests are essential for sustaining human life in the tropics (Font and Tribe, 2000), because forests always have crucial inter-relationships and multiple roles to human kind which exist between the forest itself and a host of other scientific, economic, cultural and physical processes associated with its use.

A well-managed tropical forest is a constantly self-renewing resource. The values and benefits of tropical forests reside in the products (goods and services) they provide. Among these are high quality timbers; wood for construction/domestic use and fuelwood; non-timber products such as rattans and rubber; fruits, nuts, spices, honey, wildlife protein and other foods; fodder; medicinal plants; thatching grasses; access to

lands for grazing or to watering holes during the dry season, and numerous other products of high economic value, such as dyes, cosmetics and medicines as well as tourism and recreation – an important non-consumptive service. These multiple products can sustain the basic needs of local communities as well as providing goods for wider markets and services for the whole country. These regarded to be a resource which, once depleted, can never be fully replicated (Font and Tribe, 2000), thereby affecting the needs and livelihoods of future generations implicit in the equitable principles underpinning sustainable development.

Thailand is a Kingdom of amazing biological diversity from coral reefs and mangrove forests in the south to misty mountains blanketed in lush forest in the north (Elliott et al., 2001). Thailand enacted legislation early in the 1960s as a prerequisite to establishing its protected area system comprising its national parks, wildlife sanctuaries and other reserves. The principal objective in establishing protected areas was to ensure conservation of the kingdom's array of plant and animal species, and its intrinsic scenic beauty. Thailand's first national park was established at Khao Yai in 1962 as a way to preserve Thailand's biodiversity (Emphandhu, 2005). Since then the number and area of various categories within the national protected areas are increasing rapidly, with ongoing additions and expansions aimed at increasing the conservation area to 25% of Thailand's total land area. The number of national parks and wildlife sanctuaries has increased from 16 and 21 in 1979, to 103 and 55 in 2003 respectively (ICEM, 2003, Kashio, 2000).

Protected areas are the backbone of Thailand's biodiversity conservation strategy, and are home to many of the country's rich flora and fauna from a variety of ecosystems (Elliott et al., 2001). The biodiversity "Index" prepared by MacKinnon (1997), for example, is 9.8, the highest of the five Indo-Chinese countries. 9% of all species known to science can be found in the country (Bugna and Rambaldi, 2001). MacKinnon estimated that between 20,000 and 25,000 species of vascular plants occur in Thailand, including 10,000 to 15,000 flowering species. There are more than 500 tree species and 1,000 orchids. Vertebrates number at least 3,000, including 265 mammals, 934 birds, 325 reptiles, 110 amphibians and 1,450 fishes. While biodiversity in Thailand is rich, it is also significantly threatened (ICEM, 2003). Estimates show that more than 21% of Thailand's land cover is protected in some way (Chettamart, 2003). This is an impressive figure and one of the highest rates in the world (ICEM, 2003) when considering the worldwide average is only 10% (Eagles, 2002). Unfortunately the creation of parks and protected areas has not prevented the depletion of natural areas outside the system, which have become the victim of some of the fastest rates of deforestation in the world (ICEM, 2003).

The total number of gazetted PAs is now about 350, with a number of additional areas proposed (ICEM, 2003). The major share of the PAs is national parks and wildlife sanctuaries. The PA system is relatively fragmented or degraded i.e. the remaining forest areas are broken up into smaller and more isolated units, and the PAs vary considerably in size, habitat and conservation condition. In many areas degradation of the PAs conservation values is ongoing from local agricultural encroachment,

infrastructural and tourism development, illegal logging, a substantial illegal wildlife trade and commercial over-fishing in and around marine protected areas.

In Thailand, it is now widely recognized that protected areas (mostly forests and NPs) are important resources–that fuel the continuous ecological, economic and social development. Forests, in Thailand, play an important role in long-term national security, as shown by the effects of the declining trend of forest resources from nearly 60% of total area in 1953 to about 25% in 1998 (ICEM, 2003). Forests are key regulators of climate and hydrology, guarding against economic losses resulting from floods and droughts. Protecting forest habitats and their biological and genetic resources also has direct and indirect economic benefits; for example, wild organisms have a range of potential pharmacological uses. Natural environments often contribute to national revenues through the tourism industry. Similar relationships exist between other types of protected areas, and their delivery of development benefits to a range of economic sectors. People have realized that there can be no agricultural development without water – the supply of which is guaranteed by forests. This directly affects rural farmers who have been living in and around natural ecosystems.

Urban citizens, living a stressful modern life, instinctively desire the mental relief provided by nature, as represented by forests. Forests are attaining a more symbolic meaning to these people. Thus, the "conserve nature (this mostly means 'Forests')" slogan voiced by environmental NGOs or journalists has been winning the sympathy of citizens. Both rural and urban people have started to feel that there is little sense in environmental protection, biodiversity conservation and public welfare without protecting forests.

Such a changing atmosphere in the last 15-20 years has driven Thailand's government authorities in two policy directions: 1) protection of remaining natural forests and 2) rehabilitation/restoration of degraded forest land by promotion of reforestation programmes. As a result, now, the RFD has launched nation-wide programmes for nature conservation (in most cases this means "Forest Conservation") and reforestation, which are often referred to as "re-greening programmes". In 1987 (reaffirmed in 1992), Thailand's natural forests were closed to logging; in 2001, a similar ban was placed on conversion of coastal mangroves (ICEM, 2003). While a ban on commercial logging in 1989 has helped to slowed down the destruction, sparked an increase in conservation initiatives and contributed to growing environmental awareness, but the Kingdom's annual rate of deforestation did not diminish significantly. Yet for several decades Thailand's annual rate of deforestation exceeds 1000 km^2, which is among the highest in the world (ICEM, 2003; FAO, 2002; Elliott et al., 2001).

During the past several decades (between 1980's and 1990's) Thailand's economic and industrial developments as agriculture industry, tourism industry, export industry etc. have been rapidly growing and extremely using the natural resources as industrial raw materials. As a result, Thailand has experienced rapid economic development. The country has become one of the most rapidly developing economies in the world, with an aggregate GDP growth between 1980 and 2000 totaled of over 142%

(ICEM, 2003). These developments have had the adverse effects on the environments, natural resources, forests, societies, cultural heritage and local people. The critical impact has been phenomenal in degradation, deforestation and reduction of forest area, which had been reduced from 60% of total area in 1953 to about 25% in 1998 (ICEM, 2003; FAO, 2001). Thus, most of the remaining forests have been heavily over exploited and Thailand's natural resources have been severely degraded despite a range of policies and activities aimed at protecting them.

The factors that contribute to deforestation are fairly extensive and complex. Population growth and land pressure, legal and illegal conversion of natural resources for commercial purposes and the dominance of economic development priorities over conservation have all contributed to the serious degradation of protected areas and their biological diversity (OEPP, 2000).

An emotional issue of national debate is the estimated one third of Thailand's rural villages living close to or within protected areas that depend on forest resources for their livelihoods. Rural communities continue to depend substantially on local natural resource systems for livelihood, yet natural areas are increasingly being placed off-limits to traditional subsistence uses, either through modern forms of development or as more are confined behind the boundaries of gazetted protected areas. For the past two decades, a national debate has continued on whether protected area resources can be used for rural subsistence while still ensuring ecological integrity. The recently enacted Constitution (1997) guarantees local communities the right to be involved in the management and sustainable use of natural resources (ICEM, 2003).

In 1992, Ministry of Agriculture and Cooperatives (MOAC), responsible for ensuring the sustainable management and conservation of Thailand's natural resources and protected areas, announced a policy to expand national forest cover from an estimated 25% to a total of 40% of the kingdom's land area. Key to accomplishing this goal was the expansion of existing protected areas and gazettal of new national parks and wildlife sanctuaries. A portion of the national forest reserve system, degraded by commercial logging, agriculture and settlement expansion, was to be rehabilitated (RFD, 1993).

Implementation of the expansion policy has fuelled tensions between government authorities responsible for PA planning and enforcement, and local people who depend on resources in and around protected areas for livelihood. The rights of rural communities to sustainably use local natural resources has been supported by many NGOs which maintain that forests and people can coexist. At the same time, some government officials and strict conservation NGOs oppose the transfer of control over protected areas to rural communities arguing that the risks are too great given the current degraded and diminished status of the Kingdom's remaining protected areas (RFD, 1999).

The main question emerging from a decade of experience in PA management in Thailand is how to enable government and the public to cooperate in achieving sustainable resource management which supports economic development and preserves

the natural systems on which it is based. Key lessons point to future opportunities and challenges to improving Thailand's ability to achieve its protected area management objectives.

Protected areas provide a range of environmental goods and services vital to economic development. Maintaining the capacity of protected areas to deliver these development benefits depends on their effective management. This does not imply that protected areas need to be kept off-limits to any uses. Efforts to enforce such strict controls have been unsuccessful and unproductive. Among the principal reasons that rigid protection does not work is the longstanding dependence of large numbers of society's poorest members on protected area resources (ICEM, 2003). Arrangements are needed in which the various objectives of natural resource and habitat protection can be achieved, while accommodating multiple sustainable uses.

Ecotourism, "responsible travel to natural areas that conserves the environment and improves the well-being of local people" (The Ecotourism Society) is often cited as a panacea for incorporating the principles of sustainable development in protected area management (Edwards, 2004). The fact is that ecotourism, with its focus on 'ecological-scale' and at the 'community-level', has the potential for a variety of positive environmental, socio-cultural and economic impacts and can provide mutual benefits to conservation, and tourist, as well as, the local people and can be catalyst for bring change or development at both local (destination) and national level. However, few examples exist worldwide to substantiate this claim. In reality, ecotourism struggles to provide social and economic empowerment locally and fails to secure proper protection of the local and global environment.

It has been estimated that almost 70% of Thai domestic tourists and 30% of foreign tourists engage in ecology-related activities during their travel (APO, 2002). Moreover, ecotourism in Thailand has recently been the fastest growing tourism sub-sector with an estimated growth rate of 10-15% over the past few years (ICEM 2003). As a consequence, "ecotourism is now the largest sector in the tourism industry, yet it is still among the most rapidly growing tourism industries in Thailand".

Although many questions and issues associated with ecotourism will continue to be debated, a consensus on the guiding principles of ecotourism have become apparent and Thai development strategies (like many developing countries in the world) have pushed ecotourism to the forefront of their policy agenda based on the belief that it can be a way of achieving sustainable development.

The RFD, the government agency for forest conservation and the WFT, the non-governmental conservation organization (NGO) responsible for the protection and restoration of KPM's protected forests also foresaw the importance of ecotourism development in this area of KPM as an important strategy or means among several others to cope with the conservation problems, i.e. balancing conservation with sustainable development.

KPM, the northeastern edge or buffer zone of KYNP had once been well endowed by evergreen and dry evergreen forest with lots of wild animals, but have almost entirely vanished since the past 30 years (TAT, 2002). The forest was destroyed by illegal logging and poaching, as well as, commercial forestry has replaced native forest areas. Verdant green forest had been changed into a bare mountain covered with *Imperata grass*. Fire occurs every year during summer.

As a result, in 1994, the WFT started a reforestation programme in Honor of His Majesty King Rama IX on the occasion of the 50th Anniversary (Golden Jubilee) celebrations, covering a total forest area of 5,000 rai (8 km^2). The project was expedited with the assistance of the local people who lived in the area. Apart from village development programs, fires, grazing and poaching protection schemes were employed to accelerate the result of the project. Slowly KPM forest has come back to life. Gaur is an important wildlife come back to the area. Besides, more than 100 kinds of birds have been reported, including various kinds of other fauna such as, squirrels, hares, wild boars, wild pigs, civets and Asiatic black bear, apart from gaur. The area at present is an attractive destination for ecotourist (TAT, 2002).

However, KPM at present, though endowed with a wealth of forests and other natural resources, is one of Thailand's most economically backward regions. These resources of the KPM are threatened by a variety of forces. There are several villages located in and around the reforestation area/forest reserves and most villagers are relatively poor with high dependency on consumptive use of natural resources. Encroachment, slash-and-burn agriculture and unsustainable extraction of forest products are a few of the several means of survival for many of the region's residents. Considerable pressures on forest areas exist from both local people and outside into the region looking for land and other economic interests to exploit the region's natural wealth. Pressures from traditional agricultural and tourism land uses resulted in opposition to conservation efforts in reforestation areas and nearby degraded lands. The lack of economic alternatives and insufficient support for basic human needs, such as land, water, infrastructure, roads, communications, health, education etc. contribute to the instability of the lives of the inhabitants of the region. So, the basic problem of the KPM is an environmental crisis. As a result, the socio-economic condition i.e. the standard of living of the people in this area came to a lower level with that of other part of the country. Therefore, "planning for ecotourism development" in the undeveloped or economically backward KPM is an environmental, as well as, resource-supply normative demand.

Another constraint is the fact that protecting forest reserves is 'cost and labour' intensive. As Wells (1992) describes it, conservation in many countries is characterised by a spatial mismatch between costs and benefits. Economic benefits from conserved areas tend to be limited on a local scale, increase somewhat at a national level and, as is slowly becoming clear, can be substantial on a global scale. Contrary to the above, costs, in terms of forgone development benefits, tend to be locally significant and nationally and globally moderate (Pearce and Moran, 1994).

Only a limited number of protected reserves support their own conservation in Thailand. Moreover, spending for conservation of flora, including forest environments, has been cut drastically in the last few years, and therefore, it has to be organised with a limited budget.

Apart from logging forest products, a strategy incompatible with conservation goals, ecotourism planning is widely viewed as a way of maximizing the benefits of tourism to the area and mitigating the problems of conservation that might occur as a result of development. The fact is that ecotourism, with its focus on 'ecological-scale' and at the 'community-level', has the potential for a variety of positive environmental, socio-cultural and economic impacts and can provide mutual benefits to conservation, and tourist, as well as, the local people and can be catalyst for bring change or development at both local (destination) and national level.

The role of ecotourism in encouraging the conservation of biological resources is three-fold: First, operating in its ideal form, ecotourism has proven to be an important income/revenue earner for many developing countries (UNEP, 2002). When well-planned and managed, this revenue will help to finance the maintenance and improvement of conservation areas, which, in many cases, are facing limited budgets provided by central governments. Second, through local participation, the revenue from ecotourism will be distributed to local residents. This will help to relieve poverty and the desperate need of the poor villagers to over-exploit or encroach on forests in the search for agricultural land or timber and endanger wildlife for additional income. Third, the interest showed by the ecotourists in seeing various wildlife species and nature helps demonstrate to the villagers the economic importance of sustaining the species rather than harvesting/deforesting them.

Ecotourism is particularly useful for communities living in and around forests, and other natural protected areas. Efforts must be made to link ecotourism with conservation; otherwise, ecotourism actually can have negative effects upon local environments. Communities live in and around the study area of KPM. As the forests with other natural resources provide food, fodder, fuelwood, medicinal plants, clean water, woods, as well as, other non-wood forest products and services to the people of KPM, the area must be protected. The area is also important for its biodiversity. A number of organizations, conservationists, and researchers have proposed that ecotourism could help to provide KPM communities with alternative income sources while simultaneously helping them to preserve their local environment.

The model of community participation in KPM's reforestation project met the basic ecotourism requirements and therefore, has the potential to be sustainable in economic, ecological, socio-cultural, and touristic contexts. The role of ecotourism in underpinning these efforts by providing a sound economic foundation which can penetrate local communities is essential to the sustainability of conservation and protection of the forests and biodiversity of KPM.

Tourism and recreation will increasingly use the world's forest resources, in developed countries as buffer zones from daily urban life and in developing countries

as the setting for nature tourism (Font and Tribe, 2000). Protected areas such as Thai National Parks often find it difficult to cope with the increasing pressure of visitors and it may be time to put in place systems whereby virgin forests outside protected areas can attract visitors. This should be done by managing the environment in a way that it pays to preserve forest and related biodiversity resources, rather than deforesting. Hence, it is important to highlight the examples of forest sites that have managed to combine multiple uses of forests, to consider their similarities and also their individual solutions to site-specific problems. In the background of such rational, this research is launched at KPM in the buffer zone of KYNP, Nakhon Ratchasima Province, northeast of Thailand.

This study also sought to learn the lessons from the KPM, so that, it could be applied in other protected areas or buffer zones of Thailand, as well as, in Bangladesh, where it would be promoted as a national, regional or local level development strategy. It is hoped that the study would contribute to a better form of tourism development plans in Bangladesh. So, it has been interesting to study the area of KPM, that is, an NGO (WFT) plus community managed forests for ecotourism development at KPM.

Objectives of the Study

The objectives of this study were:

1. To study the existing characteristics of the area appropriate for ecotourism development at KPM.

2. To analyze the constraints and success of ecotourism development at KPM.

3. To document the lessons learnt from KPM.

4. To recommend for ecotourism development at KPM.

Research Significance and Output

The study has both theoretical and practical significance. First, theoretically, the study would be a contribution to the body of knowledge on ecotourism development in the area of KPM. Second, the results of this study can provide some grounds or perspectives to communication and development planner for an understanding of existing tourists, resources, societies and its people, which will help future plans for development. Third, the research findings would be valuable in making educators, Tourism Authority of Thailand (TAT), DNWP/RFD administrators, and NGOs (WFT) aware of people's knowledge in development interventions such as ecotourism development and solving conflicts to make the project sustainable. This study also sought to learn the lessons from KPM, so that, it could be applied in other protected areas of Thailand, as well as, in Bangladesh, where it would be promoted as a national, regional or local level development strategy.

Scope and Limitation of the Research

This research is focused on ecotourism development on the basis of ecotourist's opinions, local perceptions, opinions and their willingness to participate. It takes into account the various components relevant to ecotourism including sustainable tourism development, ecotourism management planning, tourism development and its impacts, and ecotourism policy in Thailand. Field survey was conducted in 3 villages (locally known as Ban Khao Phaeng Ma, Ban Phor Thong Pathana, and Ban Khlong Sai) of Wang Nam Khiao sub-district and district of Nakhon Ratchasima Province, Northeast of Thailand. Primary data collection commenced on December 2005 to March 2006. The results of this study may be useful to other places where the conditions of locations and community's characteristics are similar to KPM. Sustainability is dependent upon each host community, its culture, environment and industry stakeholders which vary from place to place, situation to situation.

KPM is only one component of a complex tourism system in Wang Nam Khiao sub-district of Nakhon Ratchasima Province and as one stop on a tour circuit. Although its survival depends on related other components in the same circuit; due to the limitation of time, an in-depth study and analysis of these related stakeholders could not be studied or conducted. The researcher just had a short time to adapt to the daily life in the villages. In addition, almost all interviews with villagers and tourists were conducted through interpreters. Translations of responses into English were given as summaries of the interviewee's responses. These limitations needed to be considered while completing the analysis.

LITERATURE REVIEWS

Overview of Tourism Development

Tourism in the Global Context

In the decade since the Rio Earth Summit (1992) global challenges such as environment, health, employment, education, disparity and social mobility have multiplied and intensified. Priorities have shifted from "eco" to "socio". Institutions and instruments for managing change have evolved rapidly. These changes continue at an accelerating pace in an increasingly globalizing world.

But there are some constants (WTO, 2000):

- Triple bottom line (environmental, social and economic) sustainability is being continuously reaffirmed, with the social dimension uppermost.
- Poverty remains the single most important cause of inequality and suffering.
- Local community needs must be factored early into global and regional development patterns.
- Public-private partnerships are an essential ingredient of constructive change.

Tourism has emerged in this decade as a central pillar of the services economy, and it can uniquely help society respond to global challenges, if its growth is managed wisely, with an emphasis on ethics, poverty alleviation, the particular interests of developing states and sustainable development.

The Influence and Growth of Travel Industry

Tourism has become the world's largest industry and one of the growth sectors of the global economy, already affecting millions of the world's poor, directly and indirectly. For more than fifty of the worlds poorest countries, tourism ranked first, second or third in terms of their economies, and tourism is the only service industry to show a positive balance of trade with flows from first world countries to developing countries. Tourism has been recognized by some aid donors, some international funding agencies, and some segments of the industry as an appropriate instrument for poverty reduction (WTO, 2000).

The growth of tourism worldwide is unstoppable. The industry is growing at an average rate of 7% annually. From 1950 to 2000 international tourist arrivals increased nearly 30-folds, from 25 million to over 697 million (WTO, 2001). Approximately 2 million people currently cross an international border each day, compared with only 69,000 in 1950 (French, 2000).

Tourist arrivals are predicted to grow by an average 4.1% a year over the next two decades, surpassing a total of one billion international travelers by the year 2010 and reaching 1.6 billion by the year 2020 (WTO, 2001). The World Travel and Tourism Council (WTTC, 2001) provide the following estimates:

The World Travel and Tourism Council (WTTC, 2001) have determined that, directly and indirectly, the travel and tourism industry: contributes 11% of the global GDP (US$3,575 billion); supports 200 million jobs worldwide; and accounts for 8% of total employment, or 1 in every 12.4 jobs. By 2011, WTTC estimates that the economic impact of travel and tourism will: grow to11.6% (US$ 6,958.3 billion) of the global GDP; support 260 million jobs; and account for 9% of total employment, or 1 in every 11.2 jobs.

The gross economic benefits and potentials related to tourism are real, significant and measurable. But the importance and influence of tourism go far beyond simple revenues and job creation. Tourism and ecotourism perhaps more than any other industry, creates a wide range of opportunities and challenges, particularly at the community level.

Tourism Growth in the Developing World and Southeast Asia

In the latter part of the 20th century, the growth in tourism in developing countries was particularly pronounced. Whilst global tourist arrivals grew by 62% from 1985 to 1994, tourist arrivals to Central America grew by 91%, Africa by 89%, South America by 86%, and the Caribbean by 71%. Only South Asia, where tourism arrivals grew by 48%, was below the world average. In contrast, East Asia and the Pacific encountered growth of 142% (WTO, 1995). In addition, there has been a sharp increase in the amount of domestic tourism taking place around the world, especially in South East Asia, where growing amounts middle-income earners are keen to participate in this essential ingredient of professional life (Edwards, 2004).

Globally, the year 2000 marks the largest number of international tourist arrivals in history, with over 697 million (WTO, 2001). The year 2000 saw a growth rate of 7.4% in tourist arrivals - the largest growth in over a decade almost double the increase of 1999. “The fastest developing region in 2000 was East-Asia and the Pacific with a growth rate of 14.7% and some 14 million more tourist than 1999”.

However, in 2001 international tourist arrivals declined globally by 0.6%, the first year of negative growth for international tourism since 1982 (WTO, 2002). According to WTO, the events of 11 September 2001 determined the results of international tourism in that year. “Even so, arrivals in Africa and East-Asia and the Pacific region saw increases of 4.3% and 5.5% respectively”. This growth can be attributed to a strong global economy and “special events held to commemorate the new millennium” (WTO, 2001).

Further, globally, the WTO forecasts that international tourist arrivals are expected to grow at an average rate of 4.1 percent from 1995-2020 (see Figure 1), with over 1.56 billion arrivals in the year 2020 (WTO, 2001). “The total expected tourist arrivals by region shows that by the 2020 the top three receiving regions will be Europe (717 million tourists), East-Asia and Pacific (397 million) and Americas (282 million). East-Asia and the Pacific, South-Asia, the Middle-East and Africa are forecasted to record growth at rates of over 5% per year, compared to the world average of 4.1%. By

2010, WTO forecasts that the Americas will lose its number two position, behind Europe, to East Asia and the Pacific".

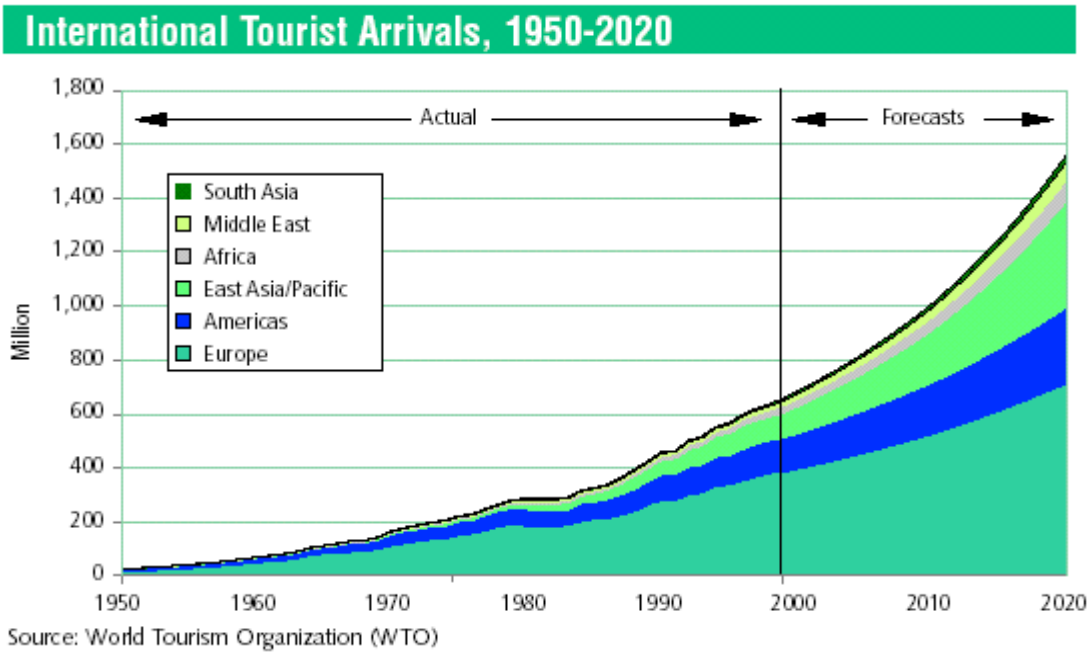

Figure 1 Trends of international tourist arrivals by region during 1950-2020

As in many Developing and the Least Developed Countries, tourism is a principal export for South and Southeast Asia. It is growing rapidly and is the most significant source of foreign exchange after petroleum (WTO, 2002). Table 1 shows international tourist arrivals by region for 2000 and 2001.

Table 1 International tourist arrivals by region, 2000/2001

Region	Tourist arrivals (million)		Growth rate (%)	Market share (%)	
	2000	2001*	2001*/2000	2000	2001*
Europe	402.5	399.7	-0.7	57.8	57.7
Americas	128.5	120.8	-6.0	18.4	17.4
East Asia and the Pacific	109.2	115.2	5.5	15.7	16.6
Africa	27.2	28.4	4.3	3.9	4.1
Middle east	23.2	22.7	-2.5	3.3	3.3
South Asia	6.2	5.8	-4.5	0.9	0.8
World total	696.8	692.6	-0.6	100	100

Note: *= Data as collected up to September 2002
Source: Harris and Vogel (2005), WTO (2002)

There is a gradual shift of tourist arrivals towards developing countries like Southeast Asia. Growth rates of international tourism receipts during the 1990s were,

on average, about 50% higher in the major developing country destinations than in comparison with the major developed country destinations. Table 1 show that East Asia and the Pacific and Africa are the only regional locations to increase their arrivals in 2001. By far the largest single developing country international tourism destination is China, a country of South-East Asia. The People's Republic accounted for US $ 10 billion in international tourism receipts in 1996, receiving 22.7 million international visitors, experiencing 19% annual growth rates of receipts since 1980. Together with earnings generated by the Hong Kong Special Administrative region, China's 1996 receipts surpass US$ 20 billion. In 2001, China ranked 5th in the world's top tourism destinations, measured both by the number of international tourist arrivals and by international tourism receipts. Thailand, China and Indonesia together generated 40% of all international tourism receipts accruing to developing countries in 1996 (Harris and Vogel, 2005).

Growth and Development of Tourism in Thailand

Tourism is Thailand's fastest growing industry. Over the past three decades, tourism has played a crucial role in contributing to the development of Thailand's economy. In the year 2004, international tourism in Thailand generated foreign exchange income of about 384,360 million Baht from 11.65 million foreign tourists, representing 24.28% more than in the previous year (TAT, 2006). In 1999, tourism has stimulated the direct and indirect employment of 11% of Thailand's total workforce, or about 3.42 million people, earning for the government over 79,000 million baht in tax revenues (APO, 2002).

The industry's growth rates have been high and continuous. The industry is growing at an average rate of over 6% annually. From 1960 to 2004 international tourist arrivals increased nearly 144-folds, from 0.081 million to over 11.65 million. At the end of the year 2006, international tourist arrivals are expected to reach about 15.12 million, implying a steady growth of over 13% a year (TAT, 2006). Table 2 illustrates the steady growth of international tourism, recent trends and targets of revenue earnings from international tourism in Thailand during 1996 to 2006.

The domestic tourism is also booming. The number of Thai domestic tourists in the same year is also expected to reach more than 79 million trips. As such, it has a major and increasing impact on both people (society) and nature (environment).

Thus, the dynamic past and projected growth of the tourism sector, its broad direct and indirect impact across all economies in Thailand make it particularly well suited as a development tool. In Thailand, it is particularly potent in economic terms in respect of: job creation, investment attraction, foreign exchange earnings, and in social terms in respect of: youth employment, community enrichment, gender equality and cultural preservation.

Table 2 Trends and targets of revenue earnings from international tourism in Thailand, 1996-2006

Year	Tourist		Average length of stay (days)	Average expenditure		Revenue	
	Number (million)	Change (%)		/person/day (Baht)	Change (%)	Million (Baht)	Change (%)
1996/1	7.19	+ 3.46	8.23	3,706.00	+ 0.34	219,364	+14.99
1997/1	7.22	+ 0.41	8.33	3,671.87	- 0.92	220,754	+ 0.63
1998/1	7.76	+ 7.53	8.40	3,712.93	+ 1.12	242,177	+ 9.70
1999/1	8.58	+10.50	7.96	3,704.54	- 0.23	253,018	+ 4.48
2000/1	9.51	+10.82	7.77	3,861.19	+ 4.23	285,272	+12.75
2001/1	10.06	+ 5.82	7.93	3,748.00	- 2.93	299,047	+ 4.83
2002/1	10.80	+ 7.33	7.98	3,753.74	+ 0.16	323,484	+ 8.17
2003/1	10.00	- 7.36	8.19	3,774.50	+ 0.55	309,269	- 4.39
2004/1	11.65	+16.46	8.13	4,057.85	+ 7.51	384,360	+24.28
2005/2	13.38	+14.84	8.10	4,150.00	+ 2.27	450,000	+17.08
2006/2	15.12	+13.00	8.20	4,300.00	+3.61	533,000	+18.44

Note: 1= Actual (arrivals, expenditure, and revenue earnings of TAT); 2= Target
Source: Tourism Authority of Thailand (TAT, 2006)

Tourism Impacts

Government and non-government organizations around the world are developing and promoting tourism in protected areas to benefit local communities and to help preserve the environment and different ecosystems (Diamantis, 2004). It is stated by WCD and also IUCN that tourism is one of the main reasons to establish a national park. However, tourism causes both positive and negative impacts on the park and the surrounding area. The positive impacts are income accumulation, job creation, conservation of the natural environment and preservation of rare species of flora and fauna (Inskeep, 1991).

Negative impacts occur when the impact is beyond the carrying capacity of the park and the surrounding area. It was only recently that the negative impacts of the tourism industry had begun to be observed. These impacts have been beneficial and non-beneficial on the economy, society, and environment (Napigkit, 1992). It is not possible to identify which of these three impacts (economic, environmental and social) are the most important as “they are all vital to the successful introduction, operation and perpetuation of tourism (Diamantis, 2004; Wall, 2002). These are presented in the Table 3 below.

Table 3 Positive and Negative Impacts of Tourism

Resources	Positive impacts	Negative impacts
Economic	- Strong catalyst for economic advancement of the host community; - Generation of employment and revenues through taxes; - Establishment of foreign tourism industry through expansion of domestic and local tourism industry; - Standard of living of local people will increase through business and job opportunities.	- Overuse of the facilities or services in the existing physical structure provided by the government; - Increasing maintenance and repair of the road network system and other public services; - Future expansion of tourism development demands a bigger tracts of land which will compete with existing land uses.
Socio- cultural	- Social and personal value which could be derived from tourism development; - Preservation of local arts and crafts; - Increased cross-cultural understanding which would promote world peace.	- Mass tourism produce congestion and competition for local services; - Shifting away from the traditional customs of the local's; - Loss of identity in the community due to outsiders.
Environment	- Improvement which could be attributed to the number and quality of tourism; - Conservation of the natural areas and development of the park and reserves, including the establishment of national and regional parks; - Tourism development will improve environment through landscaping in which aesthetics of the environment are controlled through imposing appropriate building design; - Maintenance and landscaping of infrastructure, that is, air ports, roads, water, sewage, and solid waste disposal system and telecommunication.	- Damage on the coastlines, aquatic ecosystem, islands, mountain region, the countryside in general, unique scenic spots, historical sites and monuments; - Overuse of fragile natural environment - Overuse or misuse of archaeological and historical sites leading to damage of its features; - With respect to land-use, problems may arise as tourist facilities may preempt land that is more valuable to other types of land uses, such as, conversion of agricultural land to golf courses which often destroy natural grass lands and ground water.

Source: Napigkit (1992)

It is therefore of vital importance to obtain detailed understanding of tourism in order to formulate the guidelines for preventing and remedying the negative impacts with a view to minimizing or aborting the consequences as far as possible. With the realization of this aim, tourism growth will truly be sustainable and benefiting all sectors in the long run.

Sustainable Tourism Development

Definition and Concepts of Sustainable Tourism

Sustainable tourism (ST) is a nebulous concept and to some extent has become molded to fit the needs of conservationists, governments, communities and developers. Thus, there is no universally accepted definition. The main aim of sustainable tourism is to strike a balance between the host (local community), the guest (visitors) and the environment (tourism industry). This three-way relationship is at the core of sustainable tourism principles and requires careful consideration to maximize positive benefits and minimize negative effects. It is an approach which involves working for the long-term viability and quality of both national and human resources. It is not anti-growth, but it acknowledges that there are limits to growth. Those limits will vary considerably from place to place, and according to management practices (Page et al., 2001). It recognizes that for many areas tourism was, is and will be an important form of development (Hughes, 1995). It seeks to ensure that tourism developments are sustainable in the long term and whenever possible help in turn to sustain areas in which they operate, and for good measure, sustainable tourism also aims to increase visitor satisfaction.

Swarbrooke (1999) provides a useful definition of sustainable tourism: "tourism which 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", observing the need to achieve a balance in the tourist's use of tourist resources and environments they visit and consume.

Sustainable tourism is tourism and associated infrastructure that, both now and in the future (Buchsbaun, 2004):

- Operate within natural capacities for the regeneration and future productivity of natural resources;
- Recognize the contribution that people and communities, custom and lifestyles, make to the tourism experience;
- Accept that these people must have an equitable share in the economic benefits of tourism; and are guided by the wishes of local people and communities in the host areas.

Sustainable tourism seen from the point of view of Brundtland, will meet of needs of tourists and locals both today and in the future, and it will consider the physical and other limits of the natural and cultural environments so that the carrying capacity of a given environment to absorb outside influences without losing its integrity will not be exceeded. The concept of sustainability is generally one in which a new development does not damage natural, social, economic or cultural well-being now or in the future, and of necessity it must encompass three interconnected – social, environmental and economic definitions (Leuangdee, 2001):

Social sustainability: the ongoing basic human need for food, water and shelter, coupled with such values as liberty, education, health services, recreation, work, equality, happiness, justice and the ability to preserve our culture and customs.

Environmental sustainability: this definition aims to protect and preserve biogenetic resources and biodiversity and to manage ecosystems in a way which will not degrade them but will ensure their being able to continue serving their purpose in the biosphere.

Economic sustainability: this usually refers to economic growth, but from an environmental point of view it may also include some idea of being protective of the underlying natural environment, and of using renewable resources in preference to non-renewable.

This concept of sustainability implies permanence, so sustainable tourism includes optimum use of resources, including biodiversity, minimization of benefits to conservation and local communities. It is generally accepted that sustainability in tourism means being ecologically acceptable in the long-term, financially viable and socially and ethically equitable for local communities. Thus, tourism must become part of the natural, cultural and human environment, respecting the fragile balance that is characteristic of many holiday destinations, particularly in environmentally sensitive areas. Sustainable tourism will place special emphasis on conserving the cultural heritage and traditions of local communities, enabling destinations to enhance their social and cultural heritage and improve the quality of life of their people (Ross, 2003).

Bramwell *et al.* (1996) contend that sustainable tourism has seven dimensions, these being environmental, cultural, political, economic, social, managerial and governmental. This complexity and that value-laden nature of the concept mean the approaches to the development and marketing of sustainable tourism will vary between tourist destinations.

Principles of Sustainable Tourism

The concept of sustainable tourism is inextricably linked to the concept of sustainable development (Weaver, 2001). There are 10 well known guidelines or principles for sustainable tourism which are presented below (Blamey, 2001):

1) Using resources sustainably

The conservation and sustainable use of resources – natural, social and cultural-is crucial and makes long-term business sense. The tourism industry should:

- Prevent damage to the environmental resources, natural and human.
- Act as a force for conservation.
- Develop and implement sound environmental policies in all areas of tourism.
- Install appropriate systems for minimizing water and atmospheric pollution from tourism developments

- Develop and implement sustainable transport policies, efficient public transport-and walking and cycling-to enhance and protect the environment.
- Adhere to the precautionary principle in all its operations and new developments.
- Research and establish the carrying-capacity of a destination and then operate within the limits that this sets, respecting the precautionary principle.
- Respect the needs and rights of local people.
- Protect and support the cultural and historical heritage of peoples worldwide.
- Carry out its practices in a responsible and ethical manner.
- Actively discourage the growth of exploitative sex tourism.

2) Reducing over-consumption and waste

Reduction of over-consumption and waste avoids the costs of restoring long-term environmental damage and contributes to the quality of tourism. The tourism industry should:

- Reduce consumption and promote the reduction of inappropriate consumption by its customers.
- Use local resources in preference to imports, but in an appropriate and sustainable manner.
- Only import goods when absolutely necessary, and ensure these are imported through local agencies and enterprises.
- Reduce waste.
- Ensure the safe disposal of waste produced from its tourism facilities.
- Implement waste disposal facilities, including support for local infrastructure where this is inadequate.
- Recycle waste to the benefit of the tourism industry and of the local community, where waste cannot be reduces.
- Invest in appropriate recycling schemes.
- Take responsibility for restoring damage arising from tourism projects.
- Avoid damage through proper per-planning and constant monitoring.

3) Maintaining diversity

Maintaining and promoting natural, social and cultural diversity is essential for long-term sustainable tourism, and creates a resilient base for the industry. The tourism industry should:

- Respect the natural, social and cultural diversity of destination areas.
- Ensure a pace, scale and type of development which protects rather than destroys diversity, local culture and communities.
- Prevent the destruction of natural diversity by respecting each area's carrying capacity, taking steps to establish carrying capacities and adopting the precautionary principle.
- Monitor the impact of tourism activity on the flora and fauna of a destination area.

- Encourage social and economic diversity by integrating tourism within the activities of a local community and with their full participation.
- Prevent viable traditional occupations from being displaced by a tourism monoculture.
- Actively discourage forms of tourism which cause or contribute to social problems.
- Foster genuine cultural tourism that does not reduce the host culture to a commodity.
- Promote a region's unique features, rather than impose blanket standardization.
- Ensure that the scale, pace and type of tourism is such as to foster genuine hospitality and mutual understanding.
- Promote tourism in tune with local culture, welfare and development aspirations.

4) Integrating tourism into planning

Tourism development which is integrated into a national and local strategic planning framework and which undertakes environmental impact assessments, increases the long-term viability of tourism. The tourism industry should:

- Take into account both the immediate and future needs of hosts and tourists.
- Integrate all economic, environmental, social and cultural aspects of the local area in planning.
- Respect local, regional and national policy in other sectors, such as industry, agriculture, land-use, housing and welfare.
- Consider alternative strategies for development and options for land-use that take environmental imperatives into account.
- Minimize environmental, social and cultural damage to host communities by carrying out comprehensive environmental impact assessments in consultation with local people and all relevant authorities.
- Continue to monitor positive and negative environmental and other impacts.
- Develop and introduce methodologies for improving environmental impact assessments undertaken by the industry.
- Recognize that a pace of development in concert with local situations will provide time to properly plan , develop and monitor projects for long-term benefits.

5) Supporting local economies

Tourism that supports a wide range of local economic activities and which takes environmental costs and values into account, both projects economies and avoid environmental damage. The tourism industry should:

- Take responsibility for maintaining and improving the environment where this is a direct resource.
- Ensure that environmental costs are taken into account in all tourism projects.
- Integrate environmental considerations into all economic decisions.

- Operate within the limits set by local appropriate infrastructure and carrying-capacity.
- Undertake full and regular environmental audits of every tourism project.
- Underpin economic diversity by developing tourism infrastructures that also benefit wider interests.
- Ensure that the type and scale of tourism is appropriate to local conditions.
- Prevent over-exploitation of individual locations.
- Support local income generation and small business enterprises.
- Support the economies of destination countries by maximizing retention of tourist revenues within their economies.
- Invest in environmental protection technologies and in restoration of existing damage to the environment in relation to tourism.

6) Involving Local Communities

The full involvement of local communities in the tourism sector not only benefits them and the environment in general but also improves the quality of the tourism experience. The tourism industry should:

- Respect the needs and aspirations of local people.
- Support the concept that local people should determine their own development.
- Actively encourage local community involvement in tourism projects.
- Promote the active partnership of local people and communities in tourism development.
- Involve the widest range of local associations.
- Actively support local enterprises and cooperatives which support which provide services, goods and crafts.
- Support locally-owned shops, restaurants and guide services.
- Involve local people through employment at all levels.
- Encourage the development of home-based tourism accommodation and facilities.
- Prevent disruption to and the displacement of local people.

7) Consulting stakeholders and the public

Consultation between the tourism industry and local communities, organizations and institutions is essential if they are to work alongside each other and resolve potential conflicts of interest. The tourism industry should:

- Consult with and inform local residents about potential changes induced by the rapid growth of tourism.
- Consult with and inform local residents of the potential benefits of non-intrusive, sustainable tourism.
- Introduce measures at the planning stage to encourage greater local consultation.
- Hold workshops, meetings and other public form for consultation.

- Support the establishment of proper mechanisms for efficient local consultation.
- Consult with the widest variety of local associations, including NGOs in order to integrate public and private interests.
- Fully inform and consult with local government and non-government bodies prior to and during the implementation.

8) Training staff

Staff training which integrates sustainable tourism into work practices, along with recruitment of local personnel at all levels, improves the quality of the tourism product. The tourism industry should:

- Integrate environmental, social and cultural issues into training programmes.
- Enhance the status of local staff at all levels as an essential part of the industry.
- Foster a sense of pride in the job and care for the destination and its people.
- Train staff in understanding the complex nature of modern tourism.
- Explore the positive and negative impacts of tourism on host communities, during training.
- Train staff to foster tourist responsibility towards the destination area.
- Encourage multi-cultural education and interchange programmes.
- Train local staff for managerial and leadership positions.
- Channel back profits from tourism into educational programmes which encourage an appreciation of the environment and heritage.

9) Marketing tourism responsibly

Marketing that provides tourists with full and responsible information increases respect for the natural, social and cultural environments of destination areas and enhances customer satisfaction. The tourism industry should:

- Ensure that the marketing of "green" tourism is not merely a selling ploy but reflects sound environmental policy and practice.
- Education visitors in advance of arrival and give guidance on environmental 'dos' as well as 'don'ts'.
- Dismantle racial, sexual, cultural or religious stereotyping within the industry.
- Use marketing strategies that respect the peoples, communities and environments of destination areas, and which are non-exploitative.
- Make tourists aware of their potential impact on and their responsibilities towards host societies.
- Provide tourists with full and fair information that enables them to understand all environmental and related aspects of holidays when selecting any destination or holyday package.
- Market holidays that correspond to the tourist product and experience offered.
- Provide information to tourists on respecting the cultural and natural heritage of destination areas.
- Not impose western mores on countries with different values.

- Encourage tourist to try new experiences, such as cuisines, cultures and ways of life.
- Promote tourism appropriate to the capacities of a destination in terms of the scale, numbers and types of tourist.
- Not encourage tourism to vulnerable ethnic groups or environments.
- Employ tour guides who attempt to portray societies honestly and dispel stereotypes.
- Provide customers with detailed pre-departure information which can be reinforced in flight.

10) Undertaking research

On-going research and monitoring by the industry using effective data collection and analysis is essential to help solve problems and to bring benefits to destinations, the industry and consumers. The tourism industry should:

- Initiate, encourage and support research into prior assessment and monitoring techniques for measurement of environmental, social and economic impact.
- Carry out research into improving environmental impact assessments and other project assessment techniques in relation to tourism.
- Conduct and support research into methods for anticipating the impacts of tourism, as well as, reactive problem-solving techniques.
- Improve valuation techniques to ensure that analysis include wider environmental and social aspects.
- Ensure that the results of research and any relevant information are disseminated to the institutions and individuals responsible for tourism decision-making.
- Make the results of research and studies available to local and national authorities, tourism staff and to the general public.
- Carry out studies using local expertise, experience and opinions.

When carefully examining these sets of goals or principles, one can clearly see the emphasis on sustainable development. In 1995, the World Trade Organization (WTO) stated the meaning of sustainable tourism in Agenda 21 for the Travel and Tourism industry: "Sustainable tourism development meets the needs of present tourists and host regions while protecting and enhancing opportunity for the future. It is envisaged as leading to management of all resources in such a way that economic, social, and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity, and life support systems" (Sirakaya et al., 2001).

Ecotourism

Definition and Concepts of Ecotourism

There is a plethora of definitions and interpretations of ecotourism. Ecotourism, basically, is one form of the responsible tourism and an integral part of sustainable

tourism development, which was declared as a global strategy at the World Summit at Rio De Janeiro in 1992. According to Butler (1993), sustainable tourism could be taken as:

"tourism which is developed and maintained in an area (community, environment) in such a manner and at such a scale that it remains viable over an indefinite period and does not degrade or alter the environment (human and physical) in which it exists to such a degree that it prohibits the successful development and wellbeing of other activities and processes".

The concept of sustainable tourism has focused on the management of an entire tourism industry in order to bring it in to line with the global trend towards sustainable development. It covers every element of tourism, in other words it is acknowledged that 'all tourism should be sustainable tourism' (Dowling 1995). This leads to the conclusion that the tourism industry must ensure that tourist visits will be maintained and tourism resources will retain their attractiveness indefinitely. Tourism service transactions should be profitable but considerable investments will be necessary on a regular basis to maintain or upgrade the services to meet the demands of a tourism market that is becoming more and more sophisticated and discriminating.
There must be no (or only minimal) adverse environmental, social and cultural impacts. All this must be achieved through managing the industry on the basis of the principles of sustainable development.

During the 1980s many forms of alternative tourism were introduced in order to cope with the social and environmental impacts of tourism. Ecotourism, in some sense, was included as one of the alternative form of tourism that seemed to be acceptable to the tourism industry. The term 'ecotourism' has been debated and discussed again and again in almost all meetings and conferences. Since 1986, there have probably been more than 50 definitions or explanations of ecotourism (Leksakundilok, 2004). The similarity or difference of those definitions depends on the overall concept of tourism development, the perspective of the definers and the purpose of its application. Cabellos-Lascurian who was credited as the first person explicitly to use the term in late 1980s (Orams 1995), defined ecotourism as:

"traveling to relatively undisturbed or uncontaminated natural areas with the specific objectives of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these area".

According to Swanson (1992), ecotourism is travel, often to developing countries, to relatively undisturbed natural areas for study, enjoyment or volunteer assistance that concerns itself with the flora, fauna, geology and ecosystem of an areas as well as the people (caretaker) who live nearby, their needs, their culture and the relationship to the land.

The World Conservation Union (IUCN, 1997) describes ecotourism as: "Environmentally responsible travel and visitation to natural areas, in order to enjoy

and appreciate nature (and any accompanying cultural features, both past and present) that promotes conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples"

Other definitions reported in the Travel Industry Association of America's study are as follows (McIntosh et al., 1995):

- Ecotourism is environmentally friendly travel that emphasizes seeing and saving natural habitats and archeological treasures.

- Ecotourism is a tool for conservation.

- Ecotourism is ecologically responsible tourism.

- Ecotourism is purposeful travel to natural areas to understand the cultural and natural history of the environment; taking care not to alter the integrity of the ecosystem, while producing economic opportunities that make the conservation of natural resources beneficial to local people is of great importance.

Even though ecotourism lacks a concrete definition, there are many well recognized definitions that have formed a clear picture of its core characteristics which are shown in following 4 definitions of ecotourism:

1. 'Ecotourism is a form of tourism inspired primarily by the natural history of an area, including its indigenous cultures. The ecotourist visits relatively undeveloped areas in the spirit of appreciation, participation and sensitivity. The ecotourist practices a non-consumptive use of wildlife and natural resources and contributes to the visited area through labor or financial means aimed at directly benefiting the conservation of the site and the economic well-being of the local residents...' (Ziffer, 1989).

2. "Environmentally responsible travel and visitation to natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples" (Brandon 1996).

3. "Ecotourism is travel to fragile, pristine and usually protected areas that strives to be low impact and (usually) small scale. It helps educate the traveler; provides funds for conservation; directly benefits the economic development and political empowerment of local communities; and fosters respect for different cultures and for human rights" (Honey 1999).

4. 'Responsible travel that conserves the environment and sustains the well-being of local people' (TIES 2004)

While there are a variety of definitions, each with a unique perspective, there is considerable consensus that ecotourism must be beneficial to local communities and have a positive effect on protecting the environment. Ecotourism is still in its infancy as

a global phenomena but as David Weaver points out, "some degree of consensus or cohesion may be emerging: indicators, perhaps, that ecotourism is moving towards a higher level of maturity" (Weaver, 2001). As the term ecotourism has evolved, definitions have become more precise, with stronger ties to principles of sustainable development (Blamey, 2001). Ecotourism's perceived potential as an effective tool for sustainable development is the main reason why developing countries are now embracing it and including it in their economic development and conservation strategies (Stem et al., 2003).

Elements and Characteristics of Ecotourism

Most definitions of ecotourism point out that ecotourism is dealing with natural resources, has to be responsibly managed, must provide education, need to satisfy tourists and must not neglect the local people (Fennell, 2003; TIES, 2002; Wearing and Neil, 1999; Dowling, 1995). These key characteristics or elements of ecotourism have been considered. Those are nature-based or ecological-based tourism, environmental education-based tourism and sustainably managed tourism. However, many authors add other key components to the concept of ecotourism in order to stress certain elements such as community participation-based tourism (TISTR, 1997), conservation supporting tourism (Buckley 1995), provision of local and regional benefits (Allcock, 2003).

Natural resources, particularly Protected Areas such as National Park and Wildlife Sanctuaries, are the main ecotourism attraction areas. While cultural elements may be one source of ecotourist attraction, they are controversial in their contribution to ecotourism. Thailand Institute of Scientific and Technological Research or TISTR's definition (TISTR, 1997) included the 'cultural or historical resources that are integrated into the area's ecological system' in the destination. This is consistent with 'any accompanying cultural features' mentioned by Cabellos-Lascurain (Scheyvens, 2000) and 'indigenous cultures' by Lawrence et al. (1997). Hawaii Ecotourism Association's definition (1999) included culture-based tourism as a component of the destination area. Tyler and Dangerfield (1999) included 'an element of social and cultural interest'. Sirakaya et al. (1999) pointed at 'undisturbed and under visited areas of immense of natural beauty, and cultural and historical importance', but Honey (1999) still focused on 'fragile, pristine, and usually protected areas'.

In many countries, especially developing countries, the participation and the benefit to local populations has appeared as the main objective of ecotourism, even though it could be just one component in sustainable development and all forms of tourism should be concerned about it. Many tourism actors, particularly the community developers, concluded that all forms of tourism that are related to community are ecotourism. This due to the paradigm of sustainable development that give a priority to local or host communities to both receive benefits and the right to manage ecotourism. This practice has led to a diversion of the original ecotourism conceptual framework. In many countries, some tour operators and lodge owners added local involvement in order to be appreciated by tourists (Wall, 1997) who were seeking participatory ecotourism. From this point of view, community participation seems likely to be the

only key element that has been taken into consideration by community developers. Many of them expect that local community empowerment can reduce the impact and increase the benefit to local people.

Principles of Ecotourism

While there is not a universal definition for ecotourism, it has some general characteristics, that is, those who implement and participate in ecotourism activities should follow some basic principles or ethics (Fennell, 2003; Wood, 2002):

1. Ecotourism occurs in a natural setting i.e. a natural area base: ecotourism encompasses all nature-based forms of tourism in which the main motivation of the tourists is observation and appreciation of nature as well as the traditional cultures prevailing in natural areas;

2. It contains information, interpretation and educational features: among all parties – local communities, governments, NGOs, industry and tourists (before, during and after the trip) on the importance of conservation;

3. It involves stakeholders (individuals, communities, ecotourists, tour operators and government institutions): in the planning, development, implementation and monitoring phases;

4. It provides first-hand, participatory and enlightening experience and satisfaction: from understanding of an area's natural and cultural traditions or systems;

5. It is generally, but not exclusively, organized for small groups: by specialized and small, locally owned business;

6. It minimizes negative impacts: on natural as well as socio-cultural environment and maximizes respect: for local cultures and traditions. Thus, (i) it promotes positive environmental ethics - fostering preferred behavior in its participants, (ii) it insures that tourism development does not exceed the social and environmental limits of acceptable change as determined by researchers in cooperation with local residents, (iii) It relies on infrastructure that has been developed in harmony with the environment, (iv) It does not degrade the resource i.e. there is no consumptive erosion of the natural environment visited;

7. It is bio-centric rather than homocentric in philosophy: ecotourists enter the environment accepting it on its terms, not expecting it to change or be modified for their convenience.

8. It supports to the conservation and management: of legally protected areas and other natural areas or resources by:

- generating economic benefits for host communities living in and adjacent to natural and protected areas, organizations and industry or authorities managing natural areas with conservation purposes,

- providing alternative employment, income opportunities and other benefits for local peoples that complement rather than overwhelm or replace traditional practices (farming, fishing, social systems etc.),
- increasing or creating awareness towards the conservation of natural and cultural assets, both among locals and tourists,
- stressing the importance of local ownership or joint ventures with outside businesses that works in cooperation with local authorities, and
- supporting and/or enhancing the economic empowerment and quality of life of the local communities through training and hiring local people, paying fair wages and benefits, buying supplies locally.

Dowling (1995) explained that there are five principles which are fundamental to ecotourism. They are: nature-based, ecologically sustainable, environmentally educative, locally beneficial, and generates tourist satisfaction. The first three characteristics are considered to be essential for a product to be considered as "ecotourism", while the last two characteristics are viewed as being desirable for all forms of tourism (Dowling, 1995).

Due to the diverse set of players and nationalities involved in developing the ideas behind ecotourism, there has been a sustained international dialogue on the meaning of ecotourism. However, a review of leading publications since 1995 reveals there is consensus on the key components which Maclaren (2002) pointed out:

- Contributes to conservation of biodiversity.
- Sustains the well-being of local people.
- Includes an interpretation/learning experience.
- Involves responsible action on the part of tourists and tourism operators.
- Is delivered to small groups by small-scale business.
- Requires lowest possible consumption of non-renewable resources.
- Stress local ownership and business opportunities, particularly for rural people

Travel Industry and Ecotourism

The explosion in nature tourism has lead to the need to address the impacts of the industry. The growing demand for nature-based tourism sparked interest among protected area managers to place tourism within a conservation context. Travelers have been the driving forces in the evolution of ecotourism (Drum and Moore, 2002). What brought about this nature tourism boom? The tourism data gathered and the status of the tourism industry in general has already examined at first in this section. According to the above mentioned data, within the travel industry, the fastest developing area is East Asia and the Pacific with a growth rate of 14.5%; whereas in the Americas the fastest growth is in Central America (+8.8%).

Currently, there is no global initiative for the gathering of ecotourism data. However, certain indicators show us how the larger nature tourism market, of which ecotourism is a segment, is growing at a rate faster than that for tourism as a whole, particularly in the tropics.

Ceballos-Lascuráin (1993) reports a WTO estimate that nature tourism generates 7% of all international travel expenditure. The World Resources Institute found that while tourism overall has been growing at an annual rate of 4%, nature travel is increasing at an annual rate of between 10% and 30% (Reingold, 1993). Data which supports this growth rate is found in Lew's survey of tour operators in the Asia-Pacific region who have experienced annual growth rates of 10% to 25% in recent years (Lew, 1997). Some other indicators of this growth are (Drum and Moore, 2002):

- Visitation to Hol Chan Marine Reserve in Belize increased by two-thirds over a five year period, from 33,669 tourists in 1991 to 50,411 in 1996 (Belize Tourit Board, 1997).

- More than two-thirds of tourists in Costa Rica visit PAs and reserves.

- A survey of U.S.-based outbound ecotourism operators shows that the number of operators grew by 820% between 1970 and 1994, or an average of 34% a year (Higgins, 1996).

- Ecotourism is growing at a rate of 10-15% annually, as estimated by the World Travel and Tourism Council.

- Many countries whose primary attractions are natural areas are experiencing dramatic increases in tourist arrivals. For example, arrivals in Costa Rica more than quadrupled from 246,737 in 1986 to 1,031,585 in 1999 (ICT, 2001). Belize has seen more than a 600% visitor increase, from 51,740 in 1986 to 334,699 ten years later (WTO, 1997).

- In Thailand, it is estimated that almost 70% of Thai domestic tourists and 30% of foreign tourists engage in ecology-related activities during their travel (APO, 2002). Moreover, ecotourism in Thailand has recently been the fastest growing tourism sub-sector with an estimated growth rate of 10-15% over the past few years (ICEM 2003). As a consequence, "ecotourism is now the largest sector in the tourism industry, yet it is still among the most rapidly growing tourism industries in Thailand".

Why are people so attracted to nature destinations? Most likely this trend has followed the global increase in interest in the environment (Drum and Moore, 2002). As people hear about the fragility of the environment, they become more aware of conservation issues around the world. At home, they are willing to pay more for "green" products and services and are taking specific conservation actions such as recycling. For their own pleasure, they want to learn first hand about endangered species and threatened habitats. They want to understand the complex challenges of rainforest conservation and want to experience them first hand.

Travelers are seeking more remote destinations. They want to go off the beaten path, go to the heart of the jungle. Many travelers are becoming activists. As they experience a threatened wilderness area and learn about its plight, they want to help. On the demand side, we have seen a burst of nature tourists seeking new opportunities.

International and national travelers are looking for environmental education, are willing to pay entrance fees and are eager to buy local products and services that strengthen the local economy. In sum, they are an ideal audience for addressing the conservation challenges of these areas (Drum and Moore, 2002).

Ecotourism and Protected Areas

There is a close link between protected areas and ecotourism development, mainly because protected areas are major tourist destinations.

By definition, ecotourism is about traveling to and visiting natural areas, places where nature still exists in a relatively unaltered state. In a world where population pressure and increased resource consumption are placing huge demands upon our natural resource base, natural areas are increasingly hard to find. At the same time, our global cultural heritage is under attack, making it increasingly difficult to learn from other cultures and to remain in touch with cultural roots throughout the world. Today, the remaining natural areas are mostly protected in some way. Ecotourism attractions, whether they are wildlife viewing possibilities or dramatic natural landscapes, tend to be found in these protected natural areas (Drum and Moore, 2002).

Protected areas began evolving in the 19th century largely as a response to these pressures. By "protected area" we mean a piece of land (or body of water) which is characterized by the following:

1. The area has defined borders.

2. The area is managed and protected by an identifiable entity or individual, usually a government agency. Increasingly, though, governments are delegating responsibility for protected areas to other entities that are private, public or a combination thereof.

3. The area has established conservation objectives that its management pursues.

Traditionally, protected areas are set aside and managed by government authorities in order to protect endangered species or examples of outstanding scenic beauty. In most of the developing countries, financial pressures on government budgets, global trends towards decentralization and a society which increasingly values the role of nongovernmental participation have caused some profound changes in the way protected areas are being administered and managed.

These changes are manifested in two major ways (Drum and Moore, 2002):

1. Protected areas are increasingly expected to generate some portion of the funding necessary for their own management.

2. Many other organizations, both private and public, are becoming involved in the management and conservation of protected areas, either in partnership with the traditional government agencies in charge of protected areas or by managing their own protected areas.

One of the fundamental reasons to consider ecotourism within the context of national parks is the linkage with communities that either adjacent to or within the park (Emphandhu, 2005). Tourism development has, as principal objectives, the creation and maintenance of economic opportunity, enhancement of quality of life and protection of a cultural, historical, and natural heritage (Eagles, 2002). The fact is that national parks attract visitors that support local economies are undoubted. In national parks, local communities can provide many of the needed goods and services to visitors, and can, if integrated with the management of the natural areas, protect the natural resources of protected areas. This means that the parks and protected areas are closely tied to the livelihoods of the people living near these areas. While parks and preserves perform important ecological functions by protecting biodiversity, watersheds, and soils, they can also represent the loss of critical resources to local inhabitants. The relationship between conservation efforts must not exclude people from the agenda and mixed uses of conservation areas should always be considered "If we succeed in "saving" an ecosystem but lose the people that are part of it, what have we really won" (Roberts and Thanos, 2003).

Thus, an additional responsibility of park managers is to bring conservation to the people. Without a constituency for conservation, we will ultimately fail. This constituency can be local, national and international. Ecotourism is crucial for achieving this goal and not just as a source of conservation finance. "The link between ecotourism and protected areas is therefore inevitable and profound" (Drum and Moore, 2002). Government then should pay attention on how to improve protected area and local community linkage in tourism management since it is the fundamental drivers of its interest in protected area management and means to improve local economy (Emphandhu, 2005).

The role of ecotourism

Tourism and ecotourism are usually a part of the management strategy for a protected area. The degree to which tourism activities are pursued depends upon the priority assigned to them by the area managers, who in turn should be guided by a planning document prepared for that purpose. The planning document (or management plan) should be the result of a comprehensive evaluation of the area's natural and cultural resource base. It determines the stresses, their sources and the real threats to the area's natural and cultural integrity, as well as the strategies to reduce these threats. The plan should define the area's long-term management objectives and a zoning scheme that identifies where certain activities may take place.

What we have is a coming together of two different forces to create a symbiotic relationship: ecotourism needs protected areas, and protected areas need ecotourism.

Ecotourism is increasingly being considered as a management strategy for protected areas that, if implemented appropriately, constitutes an ideal sustainable activity. It is designed to:

- have minimum impact upon the ecosystem;
- contribute economically to local communities;
- be respectful of local cultures;
- be developed using participatory processes which involve all stakeholders;
- be monitored in order to detect negative and positive impacts.

There are many compelling reasons why conservationists and protected area managers are considering ecotourism as a protected area management tool. These include the following (Drum and Moore, 2002):

1. Conventional tourism sometimes appears as a source of stress on the biodiversity of a protected area. In other cases, ecotourism can be regarded as an appropriate strategy for addressing threats to conservation targets. Nature tourists are presently going to protected areas in growing numbers. At a minimum, managers must control tourism's negative impacts. Even if elaborate visitor centers and extensive tourism businesses are not created, measures must be taken to ensure that these growing numbers of visitors do not negatively impact the biodiversity values of a protected area. These measures include increasing staff, developing monitoring systems and refining environmental education efforts. Managing visitors and minimizing impacts is a primary responsibility of protected area managers.

2. Ecotourism can capture economic benefits for protected areas. Visitors with no place to spend money are missed opportunities. Hundreds of thousands of dollars of potential revenue currently are being lost both to protected area managers and local communities because tourists do not have adequate opportunities to pay fees and buy goods and services.

3. Properly implemented, ecotourism can become an important force for improving relations between local communities and protected area administrations. This relationship is perhaps the most difficult aspect of ecotourism since it involves levels of communication and trust between different cultures and perspectives that have traditionally been difficult to achieve.

4. Ecotourism can provide a better option than other competing economic activities for natural areas. Many natural areas are threatened and need to be fortified in order to survive; ecotourism may help guard against some of these threats and competing land uses. For example, a successful ecotourism program can forestall implementation of logging in an area by generating greater revenues, especially over the long term.

5. By implementing ecotourism in protected areas, we are demonstrating that tourism need not be massive and destructive. We are demonstrating that, even within the fragile environment of protected areas, sustainable development can work.

Whereas tourism research acknowledges the negative social, economic and environmental effects of tourism development, ecotourism is praised for its positive effects, with many arguing that it is the only true form of sustainable tourism and that it provides an economic rationale to promote natural resource conservation and wildlife protection policies. For example, in Kenya, the 'visitor attraction' value of a single lion has been estimated at US$27,000 annually, with a herd of elephants valued at US$610,000 (Lindberg, 1998). The Kenyan Wildlife Service estimates that more than 90% of tourists visit a game park, and eight out of ten visitors cite 'nature and wildlife' as their major reason for visiting Kenya. By 1990, wildlife based tourism was earning $480 million annually, or 43% of Kenya's total foreign exchange (Honey, 1999). Similarly, ecotourism has been used to justify the protection of entire ecosystems. For example, the economic benefits of rainforest ecotourism are often used as arguments to limit the extraction of timber from the forest: as case of where the forest is worth more than the trees.

Forms of revenue from ecotourism might include: entrance, license and permit fees ('user' fees); admission to specific facilities (such as lavatories or camp sites); user fees associated with goods and services (such as tent hire); sales and concessions (including the profit from direct sales of souvenirs, lodgings, food sales, etc.); fees from concessionaries selling such goods and services; and revenues from logos and trademarks (Page and Dowling, 2002). However, critics of ecotourism have provided evidence that whilst ecotourism has the potential to generate considerable economic benefits, a large proportion of the money tends to be spent on travel to the destination, with relatively little spent on site (Honey, 1999). Lindberg (1998) suggests that a common priority in ecotourism is to increase local economic benefits and questions the extent to which this has been achieved. Burns (2004) comments that cry to leave only footprints "carry an ironic and unintentional truth." "The eco-centric, ultra-cautious approach of ecotourism will protect the environment but fail to produce economic benefit to all but a handful" (Burns, 2004).

Further research on tourism in protected areas has focused on the nature and experiences of the tourist (Deng et al, 2002); the economic, social and environmental impacts of tourism (Adams and Infield, 2003; Mbaiwa, 2003); and the need for planning for tourism in protected areas (Edwards, 2004). Edwards (1997) stresses the importance of regarding ecotourism as a process rather than a product and provides a prescriptive definition that incorporates five essential elements of any ecotourism project, making up the acronym 'MECCA': monitoring; education; conservation; community involvement; and advocacy (of environmental conservation).

Ecotourism System/Components Management

The system approach is essentially a perspective that allows for the understanding of the various components and interrelationships between components of an entity (Fennell, 2002). It is important to be able to be able to understand the component parts of systems. In addition to interrelationships between parts, systems are marked by feedbacks which affect the future behavior of the system. These may be negative or positive in nature, as well as economic, social (e.g. organizational policies

which create greater freedom in the work place), and/or ecological. One of the benefits of a system approach is that the organization is viewed as an overall conglomeration of sub-systems (e.g. technology and management) each interacting with one other, all of which are sensitive to change, which is felt to make the organization more robust. The system approach has also been applied in a tourism context. One of the most oft-quoted system analogies is one by Mill and Morrison (1985), who defines tourism as a system of interrelated parts. They note that tourism system is like a spider's web, and by touching one part of the web, reverberations will be felt throughout the tourism industry, including the market, transportation, activities within the destination, and how products are marketed (see Figure 2).It can begin to clarify ecotourism system by breaking it down into four sub-systems (Emphandhu, 2002):

1. Ecotourism resources;
2. Ecotourism management organizations to provide products and services;
3. Ecotourism marketing; and
4. Ecotourism resources administration and management.

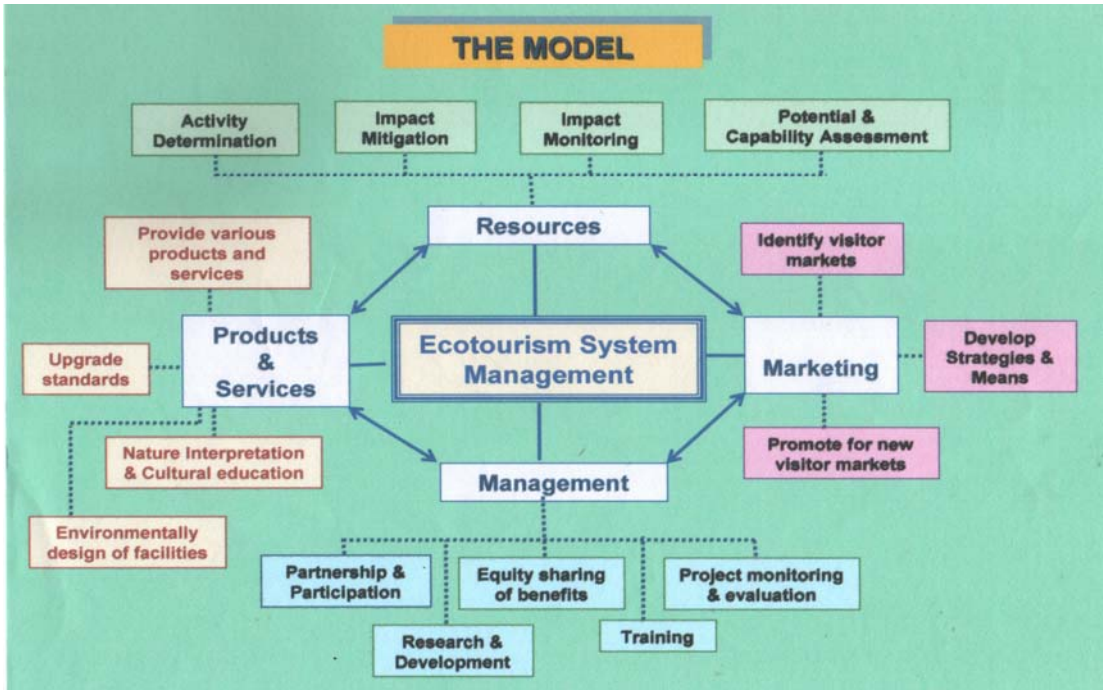

Figure 2 The model of ecotourism system management.

Note: The model is based on Thailand ecotourism policy (TAT, 1997) and adapted from Emphandhu's original model (source: Chettamart, 2003).

1 Ecotourism Resources

Ecotourism resources are any: 1) natural, 2) cultural, 3) human, or 4) capital resources that either are used or can be used to attract or serve tourists (Malhotra, 1998). As the tourist is required to travel to a destination in order to receive the destination experience (service), resources are important determinants of attractiveness.

For example, tourism depends heavily on favorable climate and geography, attractive scenery, hospitable people, and a range of resource base elements or factors. The factors influencing the tourism potential of an area can be grouped into seven broad categories: climate, physical conditions, attractions, access, existing facilities, land tenure and use (Pearce, 1992). These resources may act either as catalysts in facilitating and drawing people to a tourist region or as constraints to visitation (Fennel, 2002). A tourism resource inventory identifies and classifies the resources available that provide opportunities for tourism development. Tourism planers or managers should be conducted an objective and realistic assessment of the quality and quantity of resources they have to work with. Table 4 provides a suggested classification or basic categorization to help obtain a broad and organized picture of tourism resources and their subcomponents as they apply to outdoor recreation and tourism. It should be noted that these resources may act either as catalysts in facilitating and drawing people to a tourist region or as constraints to visitation (Fennell, 2002).

Table 4 Tourism resources

Resources	Resources sub-component
Natural resources	- Weather and Climate (i.e. seasons); - Geological resources - topography; surface materials such as soils, sand dunes, beaches, caves, rocks, minerals, and fossils . - Water resources - waterfalls, streams, lakes, rivers etc. - Flora – trees and forests, flowers, shrubs, wild edibles etc. - Fauna – Wildlife, fish etc. - Scenery/Landscape – combinations of all of the above.
Cultural resources	- Historic buildings, sites, monuments, shrines, cuisine, industry, government, religions, ethnic cultures, local festivals/ celebrities, traditions, gastronomy or style of food preparation, language spoken by residents, dress, handicrafts of the region, etc.
Human resources	- Hospitality skills, management skills, local populations, seasonal labor force, performing artists (music, drama) etc.
Capital resources	- Availability of capital/financing, Infrastructure (transportation systems such as roads, rails, airports, boats, trails, and walkways etc.; utilities such as water, power, waste treatment, communications etc).

Source: Malhotra (1998)

2 Ecotourism Management Organizations/Products and Services

Tourism organizations combine resources in various proportions to provide products and services for the tourist (Malhotra, 1998). Table 5 is a partial list and classification of organizations that manage or co-ordinate tourism related activities. It is important to recognize the diverse array of public and private organizations involved with tourism. The most difficult part of tourism planning is to get these groups to work

toward common goals. Planners should develop a list of these organizations within their own community and obtain their input and cooperation in their tourism planning efforts. Setting up appropriate communication systems and institutional arrangements (networking) is a key part of community tourism planning (Malhotra, 1998).

Table 5 Tourism management organizations and services

Off site: coordination planning, technical assistance, research, regulation.	- Central and state departments of tourism, commerce, transportation, and natural resources; - Regional and local tourism associations, local communities; - Educational organizations and consultants, e.g. Thailand Institute of Scientific and Technical Research (TISTR); Kasetsart University; Institute of Travel and Tourism Management; Travel and Tourism Research Associations; Travel, Tourism and Recreation Resource Center etc.
On site: development, promotion and management of tourism resources.	- Central and state departments of tourism, commerce, transportation, and natural resources; - State agencies: departments of tourism, commerce, transportation, and land/facility management agencies; - Local administrative organization (local governments); - Businesses/Enterprises; - Accommodations (eco-lodges, hotels and resorts); - Food and Beverage (restaurants, catering services); - Transportation (air, rail, bus, local tour services); - Information (tour agencies, reservation services); - Recreation facilities and services (golf course, local guide); - Entertainment (night clubs, amusement parks etc.); - Special events/festivals; - Support services

Source: Malhotra (1998)

3 Ecotourism Marketing

Marketing is a key economic element for successful ecotourism and is one of the most important components of the travel industry in general. In other words, successful ecotourism programs require a strong market orientation (Malhotra, 1998). The needs and wants of the tourists the planner choose to attract and serve must be the focus of much of their marketing and development activity. Therefore, it is important to clearly understand which tourism market segments they wish to attract and serve.

Tourists fall into a very diverse set of categories with quite distinct needs and wants. Planners or strategists should identify the different types of tourists, or market segments that they presently serve or would like to serve. This may involve one or more tourism market surveys. A visitor survey identifies the size and nature of the existing market and asks the following questions: What are the primary market segments a tour operator presently attracts? Where do they come from? What attracted them to the community? How did they find out about their community? How satisfied

are they with their offerings? This type of study helps identify potential markets, and means of attracting tourists to their area or community.

Marketing is "a social and management process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods and services by which individuals, organizations and groups obtain what they need and want through creating and exchanging products and value with others" (USDA, 2001; Beeton, 2000). Marketing thus affects everyone.

As the demand for ecotourism has increased, the tourism industry has taken notice. "The growing public concern with the environment and interest in outdoor-oriented travel, coupled with the growing dissatisfaction with conventional mass tourism, showed the tourism industry that there was a sizable market for ecotourism" (Honey 1999). The tourism industry has come to view eco-travel as a marketing tool to attract the growing number of environmentally and socially conscious travelers (Honey, 1999). "According to a 1995 survey by the Travel Industry Association of America (TIA), some 83% of travelers support "green" travel companies and are willing to spend more for travel services and products designed to conserve the environment" (Honey, 1999). Moreover, travel consumers interest in environmentalism seems to be increasing (Honey, 1999). Over the years, promotional materials for nature tourism and ecotourism have developed a distinct style designed to sell "experiences" rather than products (Honey, 1999). As indicated by Wearing and Neil (1999), "to establish the best methods for marketing an ecotourism destination it is important to stress the necessity of marketing to be holistic enterprise, working with community groups, indigenous and other private voluntary organization programs".

Generally to address marketing, a marketing "mix" composed of "four Ps": Product, Price, Place (or distribution), and Promotion - play an important role. Successful marketing integrates all these factors and recognizes that they are linked. Each of the four aspects of the marketing mix is dealt with briefly below:

Products and services

Products are both goods and services. It was noted that tourism products might more appropriately be viewed as services, instead of goods, because tourism is an experiential phenomenon that brings people and places together over defined period of time (Fennell, 2002). Thus, the tourism product, also known as, a tourism experience is a combination of all the various components that provide the tourist with the total travel experience and satisfaction (Bornes, 2003).

According to Bornes (2003), tourism product is composite, comprising of a bundle of goods and services covering three major groups: attractions, government management and the industry. "Attractions" include nature-based and historical tourism resources, culture, and the taste of local food, the availability and quality of shopping. Local people are considered an attraction and can be an important component in the tourism industry. "Government management" comprises of the provision and management of infrastructure, sanitation, safety, and other travel related services, such

as visa, immigration, and customs and so on. “The industry component” includes transportation, accommodation, catering and guide services. The Figure 3 identifies some key elements of the tourism product.

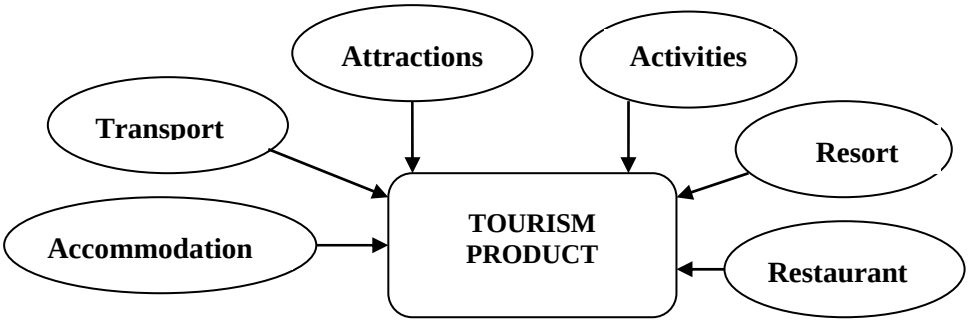

Figure 3 Key elements of tourism product (Bornes, 2003)

Murphy (1994) adopts a destination perspective of the tourism product: “resources and created facilities of a destination combine to produce an amalgam of activities and functions called a ‘tourism product’”. Importantly, he refers to ‘resources’ which would include: the natural and cultural environment of the destination and place (location) and host community.

Davis et al. (1985) note that the service provider-customer intersection allows the former to control the quality of service better, as well as, to adjust service levels as required. While a service-oriented approach to ecotourism is important, it should also be noted that there are a number of different types and levels of service. This is one of the main issues in the ecotourism field, where services range considerably in regards to the levels of education, nature-oriented focus, consumptiveness, impact, ethics and responsibility, benefits to local people, and so on. The product or programme is what sets ecotourism apart from other forms of tourism, as well as, from one ecotourism operator to another (Fennell, 2002).

Price

Price is another major consideration for an ecotourism operator. The price a visitor is charged will ultimately define what the profit will be for the organization and is therefore considered one of the most important decisions taken in marketing (Diamantis, 2004). Pricing too high will understandably leads to lower levels of programme interest, while in pricing too low the service provider runs the risk of sacrificing profit. At the heart of the matter rests the need to price according to the ecotourists ability or willingness to pay (Fennell, 2002). However, there are a range of other factors which must be taken into account when determining price. These include an understanding of who the clients are, the demand for the programme, and an understanding of what competitors are charging. Price and sales volumes are thereby linked due to the fact that the more an operator can sell the more profit the organization will earn (USDA, 2001). However, this leads back to the question: can profitability and

sustainability go together? In keeping the price high, an operator will be assured of attracting only “true (and responsible) ecotourists”. By formulating higher prices ecotourism supply will remain controlled. In having controlled prices the carrying capacity of an area is not exceeded, as well as, the environment and local community will not face such a great impact on their daily lives. Higher prices are not necessarily considered a negative aspect by the consumer, but could be perceived as equal to higher quality (Wearing and Neil, 1999).

Place

The third consideration for marketing is the place and distribution. Place and distribution refers to the activities of the firm and other entities that make the service available to the market for purchase (Fennell, 2002). Place includes the location. Is it near other attractions, or does it have enough to pull people to the area on its own? Are there other activities for people and is there accommodation? Also, how accessible it, particularly in relation to public transport, the state of the roads for self-drive tourists, availability of petrol and so on?

Distribution generally relates to how the product is being sold and the number of outlets or booking options (e.g. tourist office, travel agent, tour operators). A wide and varied distribution is likely to attract the greatest number of people. As brochures are the tangible evidence of the product, their distribution is linked to product distribution (Beeton, 2000). They should be in visitor information centers (not just the local ones, but those gateway centers), tourist offices, travel agents, direct line, online, inclusive tour operators and other tourist sites. For example, a tourist attraction will carry information on places to stay and accommodation houses will carry information on where to go and what to do. By selling the product to certain travel agencies, the ecotourism operator’s marketing efforts will be limited and not wasted on the general masses (Wearing and Neil, 1999).

Promotion

Promotion is an area of marketing which is designed to create awareness of the firm’s products and values, for smaller firms, as well as, to reinforce buying habits for larger firms (Fennell, 2002). These may be accomplished using a broad range of activities or communication tools, including the Internet, personal selling, local and national advertising, price promotions, sponsorship, merchandizing, public relations or media and sales literature. Ecotourists are known for being well informed about the area they are going to visit, therefore, the information they receive prior to a vacation is of great importance (Diamantis, 2004). Swarbrooke (1999) writes that promotion is a key element in the marketing mix in creating more sustainable form of tourism, especially in raising tourist awareness of various social and ecological issues at the destination. He also notes that promotional items, such as brochures, have often lead consumers into believing that aspects of the destination, such as, accommodation and transportation are better than they actually are. By using media such as a large advertising campaign on national television or in daily newspapers, the marketer will reach the wider general public (Diamantis, 2004). The most beneficial and cost-

effective communication tool is considered to be the "word-of-mouth" and the advantages that can be reached by it are far more credible and trustworthy than any advertising campaign (USDA, 2001).

4 Ecotourism Resources Administration and Management

4.1 Ecotourism resources administration: Key actors and communities

Ecotourism is a multifaceted, multi-disciplinary, multi-actor activity requiring communication and collaboration among a diverse range of actors with different needs and interests. Consequently, achieving ecotourism is a challenging process though ultimately enormously rewarding for all involved (Drum and Moore, 2002).

A huge range of players with varying interests and goals participates in ecotourism. Some play more prominent roles than others, but almost all are represented in the development and management of ecotourism sites. A key to the success of ecotourism is the formation of strong partnerships so that the multiple goals of conservation and equitable development can be met. Partnerships may be difficult because of the number of players involved and their different needs, but forging relationships is essential. The key players can be classified as: protected area personnel, community organizations and individuals, private sector tourism industry members and a variety of government officials and nongovernmental organizations. Their effective interaction creates effective ecotourism (Drum and Moore, 2002).

Core decision-makers

Protected area managers: Ecotourism involving PAs places those in charge of the areas in a challenging position. PA personnel are often biologists, botanists or wildlife specialists whose job is to protect significant marine and terrestrial sites. Their key duties usually involve conducting inventories, managing wildlife populations and maintaining visitor facilities (Drum and Moore, 2002). Effective ecotourism, however, requires that PA personnel be able to work closely and knowledgeably with local people and community leaders as well as with a wide variety of tourism industry representatives including tourism operators, travel agents, tour guides, government tourism agencies and others. PA personnel must be able to guide the sometimes conflicting interests of all of the ecotourism participants so that they come together for the benefit of the PA and its conservation goals. This task is a difficult one but cannot be left to anyone else. In some cases, however, it may be useful for NGOs to assume this role, usually at the request of the protected area administration.

PA managers and staff play crucial roles in ecotourism. As the main authorities on their PA's plants and animals, they provide valuable input to create environmental education programs and impact monitoring systems. On the frontlines of management, PA personnel are the first to notice natural resource changes such as environmental damage from tourism.

Local communities: People who live in or near PAs are not a homogeneous group. Indeed, even within one small community there will be a diversity of people with a range of views and experiences (Drum and Moore, 2002). Many communities in developing countries are hosting visitors and creating ecotourism programs. Sometimes their motivation is to protect their surrounding natural resources. For others, they may see ecotourism in a more economic perspective, as a means to gain income. Many communities have organized their own ecotourism programs.

The interests and concerns of local residents regarding tourism development need special attention (Drum and Moore, 2002). Tourism touches all the other groups involved professionally, in a mostly economic sense. For members of communities, it also touches their personal lives by affecting their lifestyles, traditions and cultures, as well as their livelihood and their long standing ways of organizing themselves socially and politically. In addition, most of the other players enter into tourism voluntarily, whereas in many cases communities must deal with tourism impacts whether or not they choose to.

Local residents play an important role in ecotourism for two main reasons. First, it is their homelands and workplaces that are attracting nature travelers. Equity and practicality require that they be active decision-makers in ecotourism planning and management. Second, local residents are key players in conserving natural resources both within and outside of neighboring PAs. Their relationship to and uses of natural resources will determine the success of conservation strategies for PAs. In addition, local or traditional knowledge is often a key component of visitors' experience and education (Drum and Moore, 2002).

In order to ensure that ecotourism is beneficial to local communities they must be included in all phases of planning and implementation. Unfortunately, communities have not traditionally been part of the planning process and private operators rarely ask the community about their vision for the area. Planners who don't understand the intricacies or functions of the host community and local resources usually make decisions relating to the likely impacts on the area (Wearing, 2001). Ecotourism can only be effective in promoting sustainable development if it is geared towards benefiting local communities.

"Unless a more sustainable planning approach to tourist development is implemented, the risk that it contributes to a loss of autonomy and control by the local community is quite high" (Minca and Linda, 2000).

Inadequacies in stakeholder participation and community involvement are a serious concern for ecotourism. Since local populations ultimately have the greatest stake in the outcome of any ecotourism project, a conscious effort must be made to include them in the decision-making process. Stakeholder participation and community involvement must be central to any ecotourism project in order for it to thrive and be sustainable. When the local community is effectively represented in the decision-making process and has direct involvement it can influence the process and outcomes so that the community can prosper. The local community must be actively engaged in

just about every aspect of an ecotourism project in order for it to contribute both the well being of the project as well as the local community. According to Place (1998), "there is still room for an alternative route to development, based on grassroots initiative and participatory planning that can promote more authentic, sustainable tourism." (Place, 1998) According to Wearing (2001), the overall objective of an ecotourism-based approach should be a process that a supportive community wants and controls. This support is important because it results in an environment that is more receptive to tourists (Wearing, 2001). Community participation is also important for identifying negative impacts on people who live in areas undergoing ecotourism development (Place, 1998). The information gained from community input can be used by planners to guide decision-making. While a community-based planning process may appear simple in theory, it is complicated by several factors, such as conflicting interests among stakeholders and state policies that promote centralized planning and the accumulation of capital among large tourism enterprises. If communities can be involved in the planning process from the beginning, this can reduce the future likelihood of conflict and misinformation (Wearing, 2001).

Tourism industry: The tourism industry is massive. It involves a huge variety of people including: tour operators and travel agents who assemble trips; airline and cruise ship employees; minivan drivers; staff of big hotels and small family lodges; handicraft makers; restaurant owners; tour guides; and all the other people who independently offer goods and services to tourists. The complexity of this sector indicates how challenging it can be for protected area staff and local communities to learn about and form partnerships with the tourism industry (Drum and Moore, 2002).

Consumers are in contact with many members of the tourism industry throughout their journeys. For an international trip, the traveler often first contacts a travel agent, tour operator or airline. The agent will generally contact an outbound tour operator based in the tourist's country of origin, who in turn will contact an inbound tour operator based in the destination country. The inbound tour operator is best placed to make local travel arrangements such as transportation, accommodations, and guide services. Once the traveler is at the destination, many local entrepreneurs will also become part of this scenario.

One element that binds all businesses within the tourism industry is the pursuit of financial profit. There may be additional motivations for some businesses, particularly those involved in ecotourism, but tourism companies exist only when they are profitable (Drum and Moore, 2002).

Members of the tourism industry are valuable to ecotourism for many reasons (Drum and Moore, 2002): First, they understand travel trends. They know how consumers act and what they want. Second, the tourism industry can influence travelers by encouraging good behavior and limiting negative impacts in protected areas. Third, the tourism industry plays a key role in promoting ecotourism. Its members know how to reach travelers through publications, the Internet, the media and other means of promotion, thus providing a link between ecotourism destinations and consumers.

Government officials: Officials from many government departments participate in ecotourism planning, development and management. These departments include tourism, natural resources, wildlife and PAs, education, community development, finances and transportation. Ecotourism involves officials primarily from the national level, although regional and local levels also contribute to the process (Drum and Moore, 2002).

Government officials have several significant functions in ecotourism. They provide leadership. They coordinate and articulate national goals for ecotourism. As part of their overall tourism plans, they provide vision for this industry. They may even propose a national ecotourism plan; in Australia, the government created a National Ecotourism Strategy and then committed AUS$10 million for its development and implementation (Preece et al., 1995).

Government officials at the national level may also establish specific policies for protected areas. For example, government officials decide about visitor use fee systems at protected areas, and their policies outline what systems are established and how revenues will be distributed. They may also delineate private sector practices, e.g., tour operators may be required to use local tour guides in certain areas or developers' property ownership rights may be regulated. Government policies direct ecotourism activities and may easily advance or hinder their growth.

Additionally, government officials are responsible for most basic infrastructure outside protected areas ranging from airline facilities in big cities to secondary roads leading to remote sites. The government generally takes the lead in all major transportation systems and issues. It may also provide other services important to ecotourism such as health clinics in rural areas.

Finally, government officials promote ecotourism. Sometimes the promotion is part of a national tourism campaign. At other times, advertisements for specific nature sites are created or perhaps a flagship species is identified and promoted. National government participation gives prominence to ecotourism destinations.

Nongovernmental organizations: Nongovernmental organizations are valuable players because they provide a forum for discussion and influence regarding ecotourism. They offer a means of communication with great numbers of interested individuals. These organizations can serve as vehicles for bringing together all the elements of ecotourism. NGOs can play many different roles in ecotourism implementation (Drum and Moore, 2002): directly, as program managers or site administrators; and indirectly, as trainers, advisors, business partners with ecotourism companies or communities and, in exceptional circumstances, as providers of ecotourism services.

There are several different types of nongovernmental organizations (Drum and Moore, 2002). Among them are for-profit tourism associations consisting of private tour operators, airlines and hoteliers; ecotourism associations such as those in Belize, Costa Rica, Ecuador, etc., that bring together groups from all the sectors involved; and

other trade organizations that handle travel issues. These NGOs often have members who meet regularly and communicate industry concerns through publications such as newsletters. Members are often asked to subscribe to certain principles or "codes of ethics." These associations and organizations are effective at keeping the industry informed about current trends and events.

Another set of nongovernmental organizations involved with ecotourism includes the private, nonprofit groups that focus on conservation and development or may be dedicated specifically to ecotourism. Their focus may be local, national or international. Frequently, these organizations serve as facilitators between PAs, communities and all the other players in ecotourism, sometimes providing financial and technical assistance or directly managing ecotourism sites. Some of these NGOs have constituencies that enjoy nature and would be interested in ecotourism education and promotion.

Supporting players/actors

Funders: Many different groups can fund the development of ecotourism through loans or grants: financial institutions, including investment corporations; bilateral and multilateral donor agencies such as the World Bank and the Inter-American Development Bank; private investors; venture capital funds such as the Eco-Enterprise Investment Fund; NGOs; and private banks. These contributions are often critical for PAs that pursue ecotourism. Typically there are studies to carry out, facilities to build, infrastructure to create and people to train. With PA budgets so limited, outside funding is necessary (Drum and Moore, 2002).

Several international NGOs based in the United States and Europe provides funding and/or technical assistance to ecotourism projects in developing countries. Many of them use funding provided by government agencies such as USAID, GTZ and DFID, the governmental foreign aid departments of the United States, Germany and the United Kingdom, respectively. The Nature Conservancy, through its USAID-funded Parks in Peril program, has helped many local NGOs develop ecotourism projects connected with PAs. The recently created Eco-Enterprise Fund also provides funding on favorable terms for sound ecotourism project proposals.

Financial institutions do not generally participate in planning for ecotourism or in decisions about what is appropriate for a particular PA. In this regard, they may be considered a second-tier player in ecotourism, but they are important nonetheless (Drum and Moore, 2002).

Academics: Academics at universities are another group that plays a secondary, but valuable role in the planning and daily functions of ecotourism. It is a group that helps to frame the issues of ecotourism and raise questions to ensure that ecotourism meets its stated goals. Researchers and academics facilitate learning by asking such questions as: Who exactly is benefiting from ecotourism? How do we measure benefits? How does ecotourism contribute to our existing knowledge about conservation? What are the links between ecotourism and tourism? Academics can

focus on the big picture and help us understand how ecotourism interacts with other concepts and global trends.

In addition to helping shape the hypotheses, academics conduct research. In coordination with NGOs, governments and local communities, they may (Drum and Moore, 2002):

- Develop and execute surveys, e.g., of visitor preferences, willingness to pay.
- Produce data about tourism patterns;
- Inventory of flora and fauna;
- Document tourism impacts and share results to develop a good base of information;
- Provide material to guide us in our discussions and conclusions about ecotourism; and
- Facilitate the sharing of this information and conceptual thinking through conferences, publications, the Internet, etc.

Travelers: Travelers have a unique position as players in ecotourism. They are the most vital participants in the industry and provide motivation for everyone else's activities, but few participate in formal meetings about ecotourism. Nevertheless, the choices they make when they select a tourism destination; choose a tour operator or travel agent, and ultimately, the kind of tour in which they wish to participate, have a tremendous impact upon the eventual success or failure of ecotourism projects (Drum and Moore, 2002).

4.2 Ecotourism resources management

The systems approach outlined above is central to the resource management context in general, and to ecotourism more specifically (Fennell, 2002). Kreutzwiser (1989) defines a recreational resource as "an element of the natural or man-made environment which provides an opportunity to satisfy recreational wants". Such resources include, for example, water, forests, mountains, theatres, sports complexes and festivals. Even within recreation and tourism, however, there is a myriad of issues pertaining to different types of recreational use, and the environmental conditions for and responses from such use. These include issues related to visitor use (amount of use, inter- and intra-group differences, perceptions, and expectations), effects on different resource components (e.g. soils and water), site management, and monitoring. In the past the focus of research tended to be centered on the resource itself. These days, however, there appears to be a clear consensus that the focus should center on the resource user, along with the various environments in which they interact. The relationship between ecotourism user and environment is considered through the rich base of literature on impacts and carrying capacity (Fennell, 2002).

Sustainable tourism needs to be viewed in the context of sustainable development. Sustainable development is not a fixed state; it is "a process of change" in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made in with future as well as

present needs (Wight, 2004). At present, the need to incorporate not only ecological and purely scientific values, but also economic, political, and social considerations, as well as, other more or less intangible values concerning aesthetic, recreational and even religious issues must be considered. But actually, sustainable development includes the five interrelated components (Wight, 2004):

Economic: dealing with wealth creation and improved conditions of material life.

Social: measured as well-being in nutrition, health, education and housing.

Political: pointing to such values as human rights, political freedom, security, participation and some form of self-determination.

Cultural: in recognition of the fact that cultures confer identity and self-worth to people.

Ecological: recognizing the primacy of conserving the life-giving natural resources and processes on which all progress depends.

Developments have always tended to stress the first two conditions, particularly the economic. Environmental impact assessment (EIA) has tended to stress the fifth. PAs focus on environmental systems, but they can not realistically exist in an operational vacuum; most environmental systems coexist with economic development and address the needs and aspirations of society in this mixed system and cultural and political components may well shape social and economic conditions and values. This requires an integrated approach by all players (stakeholders). To understand all the dimensions of tourism in an area, planners and strategists must recognize that tourism is part of interdependent system of cause and effects (McIntosh et al., 1995). Hence, it should be needed to consider "all five" dimensions mentioned to contribute to sustainable development and sustainable tourism or ecotourism (Wight, 2004).

Regardless of the ecotourism management technique used, the goals of ecotourism in PAs should always be: conserving the environment (resources); enhancing the quality of life of the resident community; and improving the tourism products and services. However, it must not be forgotten that tourism activity in a PA, as elsewhere, is a business, and successful operation leading to profit should be sought. An ecotourism venture that loses money and fails to produce socio-economic benefits for the locality will simply cause more problems for a PA than already exist. That is why PA authorities should place the highest priority on management of tourism activities in their PAs (Ceballos-Lascurain, 1996). Preference should be given to quality improvement rather expansion of volume and to small investment development by the local community, rather than large, externally-financed projects. In cases of conflicts, the interest of local residents, rather than those of visitors should take precedence.

Management of a PA means adequate handling of all the resources found within it, be these biophysical or human. It therefore, necessities a clear understanding of ecological principles, an appreciation of the ecological processes operating in the PA, and acceptance of the concept that PA management is a specialized form of land use. Furthermore, many PAs are already so small and isolated, and affected by man's activities to such an extent that they would not survive without some form of

management. The level and type of management will be determined by the objectives stipulated for the given area, which of course should be in line with the category to which the PA has been ascribed (ceballos-Lascurain, 1996).

However, it would be a mistake to think that management only or mainly affects natural ecosystems within a protected area. Human beings are the agents that inflict most damages on ecosystems. Thus, management of human activity in and around PAs is becoming increasingly a critical factor in PA management. For instance, provision of opportunities for complementary rural development and the rational use of marginal lands are included in the major objectives of many PAs, especially in less developed countries.

It is imperative then that the multiple functions of many PAs are systematically considered when drawing up management plans. This holistic conception, within the framework of sustainable development, is solely replacing the old negative or prohibitive approach of "absolute protection" of PAs.

Key elements of ecotourism resources management strategy

The elements included in a management plan for ecotourism in a PA, will be defined in accordance with the ecotourism strategy adopted. However, those listed below are typically included:

1. Zoning for visitor use

The appropriate zoning of an ecotourism site is fundamental to all other management strategies. Through the zoning system, the management authority, whether the community or the PA management authority, can ensure that ecotourism activities take place at a sustainable level that will maximize benefits and minimize negative impacts.

Zoning is the division of a site into a number of different sectors, or zones, for the purpose of distributing different types of use or non-use (i.e., protection) in the most appropriate places. When determining the type and number of zones, one should take into consideration their unique biophysical, social, administrative management (many types of use conflict with one another and thus must be separated geographically) and carrying capacity (approximate number of users per activities) factors (Drum and Moore, 2002). Typically, a site or a protected area within it has one or two zones dedicated primarily for public use (such as ecotourism) and two or three other zones where public use is of secondary consideration. Each zone is managed to maintain or achieve a particular natural setting within which ecotourism and other activities take place, and thus, each zone has its own set of rules and regulations for activities carried out within its boundaries.

Thus zoning strategies and regulations can be used to concentrate visitation in some areas and/or to disperse it to others. In this way, extreme pressures of tourist activity can be restricted to more resilient environments, and the most rigid protection

measures applied to fragile ecosystems (Ceballos-Lascurain, 1996). The flow of traffic, whether vehicular or pedestrian can be channeled via roads, parking grounds, trails and other built facilities, and its impacts thereby contained. Carrying capacities must be determined carefully for each management zone. Detailed and categorized inventories of the resources and attractions (both natural and cultural) found in the PAs different zones should be produced and made available for visitor use.

2. Facilities and infrastructure development

The expectation of ecotourists can not be easily identified or quantified. It is a diverse market and ecotourists have a variety of needs and motivations. Though some ecotourists may be quite happy with tent-structures, others would prefer for well furnished rooms with private baths and other amenities. Facilities and infrastructure development should respond to ecotourists actual and expected needs. To develop and improve infrastructure and facilities for PA users (visitors and locals), the essential considerations in sitting of infrastructure should be (Drum and Moore, 2002):

General considerations

- Ecosystem protection should take precedence over development considerations.
- Landscape development should be planned according to the surrounding context.
- Both ecological integrity and economic viability should be maintained as both are important factors for sustainable development.
- Feasibility of development in long-term social and environmental costs, not just short-term construction costs should be assessed.
- Development plan should be implemented in phases to allow for the monitoring and evaluation of cumulative environmental impacts and consequent adjustment for the next phase.

Special considerations

Capacity: Every site has a limit for development and human activity (use). A detailed site analysis should determine this limit based on the sensitivity of the sites resources, the ability of the land to generate and the mitigating factors incorporated into the sites.

Density: Sitting of facilities should carefully weigh the relative merits of concentration versus dispersal of visitor use.

Slopes: Sitting infrastructure on slopes can cause erosion problems and should be avoided.

Vegetation: It is important to retain as much existing native vegetation as possible to secure the integrity of the site. Natural vegetation is an essential aspect of

the visitor experience and should be preserved. For land generation (not landscaping) native species should be used and the use of exotic plant species should be avoided.

Wildlife: Disruption of animal movement, nesting patterns, feeding and roosting sites of threatened or focal wildlife species should be avoided. Opportunities for visitors should be allowed to be aware of indigenous wildlife (observe but not disturb).

Views: Views are critical and reinforce a visitor's experience. Site design should maximize views of natural features and minimize views of visitors and support facilities. To do so, high structures should be avoided.

Circulation systems: Infrastructure elements such as trails (and lodging if provided) should be located to optimize visitor circulation: minimum distances, minimum disturbance to natural features, easily located by visitors etc. Trails and roads should respect habitat and wildlife travel patterns, including maintaining canopy cover unbroken.

Conflicting uses: If the site is provided for different types of visitor use, for example, eco-lodge and campground, management authority should have to make sure that these uses are sufficiently separated geographically so that they do not conflict. Moreover, safety, visual quality, noise (crowd) and odor are all factors that need to be considered when sitting support services and facilities. These areas need to be separated from public uses and circulation areas.

Impact monitoring: Specific indicators and standards should be established to monitor the impacts of the sites use an ecotourism location/destination.

3. Analysis of tourist patterns and interests

An in-depth study of tourist characteristics in the PA such as tourist types, number of tourists, preferences, interests and requirements etc. is an essential element of the elaboration of a PA management plan. Knowing the tourists objectives and interests gives management an opportunity to manage their experience in terms of satisfying tourist's needs. Thus management of PAs must be predicated upon understanding not only the natural resource itself, but also the characteristics and needs of those using the resources (Ceballos-Laskurain, 1996). In this way tourists can be enabled to find what they are seeking, without damaging the environment or conflicting with the demands of other activities.

4. Creation of an interpretive system and environmental education

Another extremely important component to ecotourism is interpretive services and environmental education. Whether it is through tour operators, lodges, national parks, or different types of ecotourism related activities, "education can make a difference". Education is often cited as one of the most crucial elements to ecotourism because it can change the way people (both locals and tourists) think about the

environment. “Environmental education is a cornerstone of the ecotourism philosophy; organizers hope that tourists will take home what they learn about delicate ecosystems” (Roberts and Thanos, 2003). The hope is that education can build an environmental ethos, which can extend beyond the immediate scale of the ecotourism venture so that ecotourists become active advocates for conservation in the area visited and their hometowns or countries (Stem et al., 2003).

The most common form of environmental education comes from knowledgeable tour guides. One of the most effective ways to educate tourists and benefit the local community is to hire local guides. One of the advantages of local guides as opposed to foreign guides is their knowledge about the local ecology, natural history, and local culture (Place, 1998). Since tour guides serve as the primary source for environmental education, it is important that they are knowledgeable and well trained.

Environmental education is vital to the ecotourism experience, but it is not limited to the tourists. Education can also be important to creating a knowledge base that benefits the local communities as well. Increased awareness and understanding of conservation issues can have a positive impact on local environments and communities and can be passed down to future generations. According to Wearing (2001), “initiatives such as university and high-school ecotourism programmes will eventually lead to greater local involvement in protected areas and, eventually, the tourism industry” (Wearing, 2001). Creating a well-educated public that understands importance of ecotourism to PA will help benefit the PA resources in the long run.

Unless the PA users (community or visitors) are well informed about the nature or ecosystem, status and importance of ecosystem, there will be little sympathy for management or conservation objectives (Ceballos-Laskurain, 1996). Furthermore, tourists have a wide range of objectives when visiting an environment of which learning is only one. They will also have different types of learning in mind. Many visitors seek to increase their self-knowledge by visiting wilderness areas. Others wish to improve their understanding of the natural environment. Still others want to pick and choose their learning activities, according to their existing knowledge base or interests. Therefore, carefully planned and well-organized interpretive programs, such as slide presentation; exhibition and resource information distribution can satisfy many different needs and enhance a visitor’s experience. These need to be expanded. The constant provision of information is one way of minimizing problems of protected area visitors (Ceballos-Laskurain, 1996).

5. Creation of self-financing and revenue-generating mechanisms

Natural resource conservation creates a multiplicity of economic benefits for society such as fresh water, clean air, genetic banks, carbon sinks, coastal protection (coral reefs and mangroves), recreation, etc. However, as these benefits have not been allocated a market value, consumers have typically enjoyed them for free. At lower levels of demand in the past, this pattern may have been sustainable. Today, however, the vociferous demand for natural resources and their often unequal distribution means that they and the ecosystem services they provide are increasingly threatened.

Despite their obvious and growing popularity with tourists, recreational opportunities in protected areas are rarely priced adequately. Parks around the world frequently charge a low, or no, price for providing recreational opportunities to the public. Consequently, the demand for access to a protected area often exceeds an area manager's capacity to manage it.

In developing countries, governments pressured by structural adjustment programs and debt interest payments increasingly limit funding for protected area conservation. In this context, it is essential that protected area systems not subsidize recreation opportunities for foreign nature tourists and access for tour operators (Drum and Moore, 2002).

The major goals of ecotourism are to generate income for conservation and to benefit local communities and other stakeholders that are also participating in the ecotourism program in or near a PA. The degree to which a visitor site produces income depends in large part upon its importance as a tourism destination and, secondarily, upon its management and marketing capabilities. There are a number of relatively simple market-based mechanisms exist to generate revenue income for conservation in an ecotourism site (Table 6), some of which may not apply to all situations.

Table 6 Types of fees and charges in protected areas

Fee type		Description
Entrance fees	-	Allows access to points beyond the entry gate.
Admission fees	-	Collected for use of a facility or special activity, e.g., museum or photography class.
User fees	-	Fees paid by visitors to use facilities within the PA e.g., parking, camping, visitor centers, shelter use, etc.
Licenses and permits	-	For private tourism firms to operate on PA property, e.g., tour operators, guides, transport providers and other users.
Royalties and sales revenue	-	Money from sales of souvenirs.
Concession fees	-	Charges or revenue shares paid by concessionaires that provide services to PA visitors, e.g., souvenir shops.
Taxes	-	Such as on hotel rooms, airport use and vehicles.
Leases and rent fees	-	Charges for renting or leasing park property or equipment.
Voluntary donations	-	Includes cash, 'in-kind' gifts and labor, often received through 'friends of the park' groups.

Source: Drum and Moore (2002)

6. Equitable benefit-sharing: Local business and household income

The PAs administration must draw up working agreements with the local authorities, the local communities and the different tourism entrepreneurs who operate or wish to operate within the PA. Concession agreements with individuals or firms who provide visitor services are a particularly valuable management tool for the PA (Ceballos-Laskurain, 1996). They include licensing of concessions for food, lodging, transportation, guide services and retail stores. Governments can impose conditions on

concession leases in order to address additional objectives such as increasing local employment or sales of locally produced goods.

Local communities can welcome ecotourism if they believe that it can have a positive impact on their everyday life by improving local businesses, utilizing local labor, and increasing overall household income. “Many permanent residents living in or adjacent to potential ecotourism destinations may desire to improve life opportunities for themselves and their children and may see ecotourism as generating jobs, stimulating incomes, diversifying economies, and enhancing standards of living”(Wall, 1997).

The key to gaining local enthusiasm for an ecotourism project is to do as much as possible to ensure that benefits are equitably shared and that no one shoulders a disproportionate share of the cost (Lindsey, 2003). One of the best ways that ecotourism can maximize its contribution to the local communities is for local residents to be involved in its management and operations (Stem et al., 2003). Monteverde Cloud Forest reserve is an excellent example of an ecotourism project that has had great economic success (Aylward, 1996). One study found that it generates more income from tourism than all of the Costa Rican National Parks put together (Langholz and Brandon, 2001). There is also strong evidence that in Monteverde has been contributing to higher household income and better overall standards of living for local people. Ecotourism has now surpassed dairy farming as the community’s main source of income (Honey, 1999).

While the Monteverde Cloud Forest Reserve has proven that tourism can be economically productive, there is major concern that ecotourism in other areas of Costa Rica, which are not as well managed, are not benefiting local economies and are creating relatively few low paying jobs for local people. (Minca and Linda, 2000). Sometimes in a very small community a few low paying-jobs can mean a lot but there is still no doubt that in order to be successful, ecotourism projects should focus on retaining as much work for locals as possible, integrating local economies, and making sure that economic well-being of households are improved rather than depreciated. Employment opportunities must be retained for the local people rather than being given to outsiders who may have more experience. “Certainly, bringing in outsiders to run all aspects of the project is undesirable, since it not only divorces the community from the effort, reducing their interest in supporting it, but ensures that they will not profit from it, limiting their ability to service without turning to unsustainable industries”(Lindsey, 2003).

One negative impact of ecotourism is that it can lead to an increase in cost of living for local people (Wearing, 2001). One study in the Osa peninsula showed that ecotourism has left its inhabitants even poorer than before, while transforming the area into the “ultimate” attraction for ecotourists. As a result of ecotourism in the region, natural resources that once provided livelihoods for local people, only generated profits for outsiders, and the local communities were left with very little (Minca and Linda, 2000).

Ecotourism should be able to help local businesses dramatically increase revenues because it can bring people closer to local markets. It can be an important, low-cost mechanism for local businesses and artisans to market and sell their goods. Ecotourism can serve as a spin-off for many other businesses, especially those in the informal sector (Stem et al., 2003). In order to be most effective, ecotourism should be focused on mechanisms, which link the local economy to other local economies, national economies, and international economies.

If tourism is to promote community development in more isolated/remote regions, it will need to focus on expanding, improving, and promoting locally owned businesses (Place, 1998). The ultimate economic goal of ecotourism should be to contribute to the economic growth of the local community so that revenues are helping to meet the needs of the local people and are being reinvested into the community in order to improve it. Revenues from ecotourism need to be channeled into programs that benefit the local community, such as research, education, and health care. If money generated from ecotourism is distributed equitably, the project can become sustainable and the long-term economic prospects of the community can be enhanced (Lindsey, 2003).

7. Ecotourism training and incentive programs

Many argue that ecotourism provides relatively few jobs that are only low paying. Some of the primary employment opportunities through ecotourism are jobs such as hotel servicing, craft making, shop ownership, tour operations, government agency staff, and park rangers (Wearing, 2001). This is partly due to the fact that ecotourism depends on a lack of infrastructure and businesses are small with outsiders already staffing most management positions. Ideally locals should buy and manage small businesses such as accommodations, but this is not possible due to the financial roadblocks they face. Banks and Government programs often discriminate against the rural poor. It is also unreasonable to expect locals to be able to switch to ecotourism jobs right away and manage such operations successfully without the necessary knowledge and training (Wearing, 2001). While the local culture must be respected, local people must still be trained so that that they can work in an industry which relies on communicating with international visitors.

The government could do more to provide small locally owned businesses a competitive advantage through subsidies, duty exemptions, and other types of incentives. Even innovative and responsible locally owned ecotourism projects falter because they cannot get sufficient investment loans and they are forced to compete with large foreign companies (Honey, 1999). There is some evidence to suggest that when given the opportunity, small locally owned businesses could be very successful (Place, 1998). There are also some auxiliary long-term employment opportunities, which are open to local populations and can improve quality of life. Training small guides and tour operators as well as PA managers and forest rangers, offers employment opportunities for rural community members with knowledge of the area. Local people possess practical and ancestral knowledge of the natural areas. This knowledge combined with proper training and education in areas such as languages, and

environmental and natural history skills are crucial to these types of jobs. Training and education systems can be developed all the way down to the children of the local people so that they will be ready and able to participate in future tourism operations. Other opportunities that can be created through ecotourism are construction and maintenance personnel, gardeners, waiters, cooks, and cleaners. Many of these opportunities may be able to provide women with employment (Wearing, 2001).

8. Future research needs

Current literature indicates that there has been a fair amount of progress in several areas of ecotourism research but there are still gaps in knowledge that need to be addressed. According to Honey (1999), "There are, in fact, pressing issues surrounding ecotourism that are crying out for deeper investigation, more rigorous analysis, more careful theoretical work" (Honey, 1999). There is a great deal of need for an improved comprehension of the complex web of relationships within ecotourism. A better knowledge base of the complexities of ecotourism will be crucial to improving planning of future development (Minca and Linda, 2000).

One of the major problems in ecotourism research has been the lack of experiments that take baseline measurements prior to development and then track environmental change over time (Weaver, 2001). Monitoring and evaluating ecotourism has been a major area of need, and sustainability indicators are only now being tested. Quantitative measures such as sustainability indicators and qualitative data of from local populations and the tourist should continue to be collected and analyzed. Qualitative measures can be extremely useful. According to Minca and Linda (2000), "Further research could focus more concretely upon local pattern of development, relying upon specific field surveys aimed to address key issues such as local involvement (qualitative and quantitative), the success of local tourism investors and actual improvement in sustainability brought by environmental NGOs' programmes" (Minca and Linda, 2000). Many areas of research are yet to even be explored. For example, "There is at present no systematic effort to gather data worldwide on ecotourism as a category distinct from nature, wildlife, and adventure tourism" (Honey 1999). Ecotourism has become such a global phenomenon that the need for more research is becoming more of a pressing issue.

An Overview of Ecotourism Resources and Management in Thailand

Ecotourism Resources

The kingdom of Thailand is well endowed with abundant tourism resources, both natural and man-made. Mattsson's report (1999) explained that potential for ecotourism in Thailand is found in five areas: biodiversity and landscapes; protected areas; the Mekong River and waterways; history and culture; and human diversity.

Among the above mentioned resources, the protected areas are the backbone of ecotourism in Thailand. In other words, protected areas are the main ecotourism resources in Thailand (ICEM, 2003, Chettamart, 2003). There have been over 350 units

of natural parks and protected areas, 1060 historical and cultural sites, and a countless number of urban and rural tourist destinations across the country (ICEM, 2003; Chettamart, 2003). Thailand is a Kingdom of amazing biological diversity from coral reefs and mangrove forests in the south, to misty mountains blanketed in lush forest in the north. This beautiful country has fascinated and intrigued both casual visitors and professional naturalists for more than a century. Spectacular scenery, some of the world's finest beaches and dive sites, impressive caves and water falls, as well as, cultural diversity; make Thailand an ideal destination for ecotourists (Elliott et al., 2001).

On land, forests and their wildlife are the main ecological attractions. Thailand's vascular flora numbers approximately 15,000 species. The country is home of 285 mammal species (108 of which are bats), 962 bird species (10% of the world total), 313 reptile species and 107 amphibian species (Elliott et al., 2001). The country is rich in historical and cultural resources. There are many structures and monuments from past civilizations which have been declared World Heritage sites, such as Sukhothai and Ayuthaya.

These resources can help generate income for their countries at both macro and micro levels. Normally a large proportion of the income benefited only a small group of investors and operators. However, according to Mattsson (1999), local financial profit is a principle feature of ecotourism. There is opportunity for local benefit from craftwork, serving as guides and porters, provision of animal transportation (elephants, horses, bullock cart) and vehicles and accommodation.

Protected Area System

In order to protect the above mentioned biological resources, successive governments of Thailand have built-up an impressive system of protected areas. Thailand's protected area system (PAS) was established in 1962 when Khao Yai was designated as the country's first National Park (Chettamart, 2003). Since then the system has expanded continuously to include 319 protected areas of various descriptions, covering 108,064 km^2 or over 21% of the country's land surface. As shown in Table 7, it comprises 145 National Parks (both terrestrial and marine), 69 Forest Parks, 53 Wildlife Sanctuaries, and 52 Non-hunting Areas (DNWP, 2003). These do not include the vast areas of watershed protection forest as they often overlap with aforementioned protected areas and are not possible to be differentiated as the individual units.

Table 7 Thailand's Protected Area system and its categories with area protected

Protected area category	Number of units	Protected Area (km^2)	% of national land area
National Parks (IUCN category II)*	145	68,928	13.46
- Terrestrial	119		12.05
- Marine	26		1.41
Wildlife Sanctuaries (IUCN category Ia)	53	34,848	6.81
Non-hunting Areas (IUCN category VI)	52	3,408	0.67
Forest Parks (IUCN category III)	69	880	0.17
Total	319	108,064	21.11

Source: Emphandhu (2005), Chettamart (2003), DNWP (2003)

Note: *= The number of NP includes both officially and unofficially declared NPs
= The Table does not include Class I Watershed Protection Forest (IUCN category 1b), Mangrove Forest Reserves (IUCN category VI), and other small protected areas such as botanical garden and arboretum.

Definitions, Objectives and Values of Protected Areas

The different protected area categories in Thailand serve various functions depending on their enabling legislation, management objectives, and ecosystem capability. The areas also vary in size, habitat type and condition. They are not independent, but rather reinforcing to each other in terms of conservation, utilization and management. Under the Wildlife Protection and Reservation Act (revised 1992), and the National Parks Act of 1961, a number of conservation areas (Conservation Forest Zone – Zone C) are defined as comprising Thailand's Protected Area Estate, as follows (ICEM, 2003; Chettamart, 2003):

National Park: Area with beautiful landscape, rare plants or animals, important history, preserved in its natural state for public education and enjoyment.

Wildlife Sanctuary: Preserved so that wild animal species can be preserved and bred in a natural environment.

Non-hunting Area: Preserved for the protection of specific wildlife species but too small to be a national wildlife sanctuary.

Other categories of forest protected areas which have no specific legislation, but fall under the National Reserve Forest Act 1964 include:

Biosphere Reserve: To conserve the integrity and genetic diversity of plant and animal communities within natural ecosystems.

Class I Watershed: Preserved under natural forest cover to protect critical watershed headwaters including Class 1A and 1B.

Botanical Gardens: Collections of indigenous and exotic plant species for research and ex-situ conservation.

Arboreta: Smaller than botanical gardens for collections of various plant species, particularly flowering plants with economic value.

Conserved Mangroves: Excluded from utilization to protect marine flora and fauna.

Forest Park: Preserved for its natural scenic and public recreation value, but too small to be a national park.

Under the Environmental Enhancement and Promotion Act 1992, there is one type of protected area:

National Environmental Conservation Area: Covering land, mountains, swamps, and areas of interesting morphology that should be protected from economic and social exploitation.

Technically C- Zones (Conservation Forest Zones) are protected from all human use and settlement. In reality, a significant number of people have lived in these areas prior to their gazettal and there has been further encroachment subsequent to designation. Throughout the 1990s, it was estimated that as many as 11 million people representing over 20% of Thailand's 56,000 villages were living in designated National Forest Reserves (ICEM, 2003). The contradiction between the history of human settlement in protected areas and the strict legal prohibitions on use and occupancy has been the focus of national controversy for some time.

Ecotourism Resources Management

Protected area agency and management structure

The management institution of these resources is relatively complex as it involves several pieces of legislation, organizations and different levels of co-ordination and participation by stakeholders, for example, Key NGOs, private sector, tour operators and local populations living in proximity to protected areas. However, the resources and management regime have together served well to the country's tourism industry for more than four decades.

The Kingdom's protected area system is currently being administered and managed by the Ministry of Natural Resources and Environment's (MONRE) Department of National Parks, Wildlife and Plant Conservation (formerly Royal Forestry Department under the Ministry of Agriculture and Cooperatives). The Department of National Parks, Wildlife and Plant Conservation (DNWP) comprises 3 major offices, namely Offices of National Parks, Wildlife Conservation and Watershed Conservation. Each office is assigned to manage resources as its name implies and in accordance with existing legislation. All the three offices are located at the Department

Headquarters in Bangkok and report directly to the Director General. Under the Office of National Parks, there are administrative divisions dealing with recreation and nature interpretation, visitor facility development, and natural resources management, all of which are fundamental to nature tourism or ecotourism development (Chettamart, 2003).

In addition to the offices mentioned above, there are 21 regional offices to be officially named as "Office of Protected Areas Management" located in various provincial towns. Each office is mandated to coordinate with those offices in Bangkok, and to assist in supervising management activities at the protected area units under its responsibility (Royal Decree of 2003).

Protected area legislation and regulation

Protected areas management in Thailand chiefly rests on three existing laws, namely the National Park Act of 1961, Wild Animals Preservation and Protection Act of 1992 and National Reserved Forest Act of 1964. All these legislation can be said to have been used to enforce and support management activities for all protected area categories (Faculty of Forestry, 1987). They are reinforced by several perspective regulation issued by the Ministry. Thus, they are strong and effective in any respects, particularly in resource protection. Since all the three laws were enacted long before and often are not being able to keep up with the changing situation, the agency can turn to the Enhancement and Conservation of National Environmental Quality Act of 1992 and others for support its activities if needed.

Since ecotourism is a relatively new phenomenon to Thailand, therefore, there have not been official statements related to 'ecotourism' per se in any piece of legislation to date. However, the National Park Act has provided guidance for managing all parklands for recreation and nature education for over 40 years, national parks thus can become a front-runner of all protected area categories as the 'true ecotourism destinations'.

Ecotourism policy in protected areas

Not much can be said about nature tourism/ecotourism policy in the system of protected areas in Thailand as, in fact, there is none exists in written form. Most tourism development in protected areas has primarily revolved around the administrative decisions. Guidelines and recommendations appeared in the units' Management Plan or Master Plan is only a part of such decisions. However, the government is quite keen on tourism development. H.E. Prime Minister Thaksin Shinnawat, in his official declaration of the government policies to the National Assembly in early 2001, stressed that the tourism industry could very well be the country's substantial income earner and, in turn, could solve its on-going economic illness. He then pledged to increase the diverse forms of tourism and to upgrade the quality standards of all tourism products and services to ensure the long-term competitiveness with other countries. One of his policy statements, published and quoted widely, is that "Increase the diversity of different forms and purposes of tourists,

targeting ecotourism, health tourism, and nature tourism. New tourist sites must be developed and promoted. Communities must be able to play a greater role in tourism management" (Emphandhu, 2003).

In Thailand, TAT, the government agency responsible for tourism marketing and promotion has developed the National Ecotourism Policy since 1997 (Leksakundilok, 2002; Chettamart, 2003). The policy has provided guidance to all stakeholders involved for ecotourism development and operations. The National Ecotourism Policy in Thailand appeared in the era of sustainable development. It is a part of sustainable tourism development (Leksakundilok, 2002; TISTR, 1997). Therefore, its main policies are as follows:

1) Ecotourism development must control and manage the resources in order to retain their original conditions as far as possible, and to avoid or to abstain from traveling in sensitive areas which are easily adversely affected and are difficult to rehabilitate.

2) Ecotourism management must take the character and potential of existing resources into consideration in order to arrange appropriate activities and to ensure the compatibility between ecotourism and the original activities carried out in the areas. This should include the avoidance of being in serious conflict with other forms of tourism, and the benefits of ecotourism should flow to the wider tourism system.

3) Ecotourism development must promote educational development and the creation of awareness to jointly maintain the ecosystem of the area, rather than focus on economic growth and income generation only.

4) Ecotourism management must facilitate the involvement of the local people and local organization in the tourism development process, particularly in the management of the resources, services, and programs designed to transfer knowledge and community culture. This should include their participation in formulating development plans and opportunities should be created for their representatives to become members of joint-committees at every level.

5) In developing sustainable tourism, it is essential to give priority to ecotourism management and to give various related organizations clear roles in promoting ecotourism. This can be done through appropriate budget allocation, personnel provision, and management system design.

6) An ecotourism development plan should be incorporated into the development plans at various levels, namely district development plan, provincial development plan, and regional development plan, along with sufficient budget allocation and distribution to facilitate implementation.

7) The development objectives should be supported by research which analyses and assessed all aspects of tourism so as to determine or adjust the management guidelines, to solve any problems which arise, and to improve the plan step-by-step.

8) The law should be used strictly to control, supervise and maintain the environmental condition of tourism resources by focusing on providing advice and cautions along with cultivating discipline among tourists.

9) Operating guidelines or a code of conducts should be provided for related persons in order to facilitate proper involvement in ecotourism development.

10) An ecotourism network should be established both vertically and horizontally through the coordination of information and joint management at every level.

In order to make ecotourism the main component of the Thai tourism industry, concrete actions under the national tourism policy framework should be undertaken to ensure that the objectives and targets are attained. National Ecotourism Action Plan (NEAP) was established on the October 2, 2001, which supports the following six main strategies (TISTR, 1997):

1. Policy and strategy on tourism resources and environment management.

2. Policy and strategy on educational provision and creating environmental awareness.

3. Policy and strategy on local community involvement and public participation.

4. Policy and strategy on marketing, promotion, and tour guiding.

5. Policy and strategy on the development of infrastructure and tourism services.

6. Policy and strategy on promotion of the investment.

The National Ecotourism Policy had studied, discussed and integrated the concept of ecotourism management and proposed the specific plans and projects, which cover all aspects related to intensive ecotourism management. Furthermore, the policy believed that “ecotourism is a process not the final product of the environmentally sound tourism management”. The process of learning together on environmental and resource management should be established by using ecotourism as a tool (Leksakundilok, 2002).

Then, TAT assumed a key role in developing a National Ecotourism Action Plan to reinforce the policy. The action plan was completed in 2001 and approved by the Government cabinet the same year (TAT, 2001). The National Ecotourism Action Plan 2002-2006 was set and used as a framework for implementation and coordination among all stakeholders. Nevertheless, the action plan, comprising 14 sub-plans and 37 implementation projects, has never got off the ground as the package as there has been changed in the budgetary policy and procedures. Most of the stakeholders thus have difficult access to financial support to undertake their task as clearly laid out in the action plan.

TAT has also sponsored a variety of activities connected to ecotourism such as organizing seminars and training workshops for different groups of stakeholders, studies on ecotourism resources potential of various destinations, producing handbooks for ecotourism operation, and developing ecotourism database center. The most recent one, TAT, in collaboration with Kasetsart University Faculty of Forestry, organized the workshop on ecotourism codes of conduct. Its main objective was to develop the guidelines of best practices for all stakeholders. This workshop, in fact, is regarded by many participants as an important step to upgrade the ecotourism products and services in the country. To make that possible, as recommended by some, concerned agency or agencies must develop "certification program" to audit and certify those practices (Chettamart, 2003).

On-the-ground protected area management activity

As mentioned earlier, protected areas in Thailand have intrinsic values for recreation and ecotourism, therefore, they are viable for ecotourism development, particularly national parks. However, the success in ecotourism management depends on several factors. Participation by stakeholders such as local communities and tour operators is an essential element. The control of tourism impacts within acceptable limits, and distribution of benefits from tourism in national parks to local economy are equally important issues.

Sustainable tourism or ecotourism has been acknowledged as fundamental principle in tourism management in national parks. Tourism management guidelines are normally integrated into park management plan or formulated separately. The main ideas are that the natural and cultural environment within the national parks should form the basis for ecotourism use in the protected areas and must not be put at risk since protected area ecotourism depends on high quality of natural environment. The national park management must exist to protect the values for which the area was originally established and manage tourism properly through active management of tourism and tourists, sharing of responsibility for management with tourism operatives, local communities and visitors, and providing potential economic opportunities for tourism. Visitors expect to find facilities, programs, as well as recreational and learning opportunities within the park, but not all demands can be met, as some of these expectations may be inconsistent with park goals and objectives (Emphandhu, 2003). There is a linkage of national park, tourism, and local economy that should not be overlooked.

The natural environment is a key element for nature tourism in national parks. National parks in Thailand contain all representative ecosystems appeared in the country with diverse species of flora and fauna. They possess distinct natural features of various interests. Obviously, Thai national parks have very high potential and capacity to be developed and managed for ecotourism and sustainable tourism. Taking into account of the mandate and management objectives of national parks mentioned previously, Thailand is an excellent position to push ahead its efforts to develop ecotourism industry basing on the rich resources found in its national parks and other protected areas.

After 1945, visitors to national parks accelerated due to expanding populations, more affluence and greater availability of parks and protected areas (WCPA, 2005). The similar situation has taken place in Thailand. Averagely about 15.4 million visitors visited Thai national parks during 2000-2003 (Emphandhu, 2005). As a result, pressure on tourism management in national parks has increased. Chettamart (2003) drew together current tourism management situations in Thai national parks as the following:

1. Most national parks have adopted the "ecotourism concepts and principles" as a framework for tourism development and management. They have strictly followed the general direction and administrative oversight of Department of National Park, Wildlife and Plant Conservation (DNWP). Tourism development and management in most parks seems to be in line with the Tourism Authority of Thailand's (TATs) Ecotourism Policy and reflecting the current Government Policy.

2. Most key national parks (about 40 out of 145) have management plan in place. The park management plan usually contains management zones to guide overall activities for resource and environmental protection, recreation and facility development for visitor use. DNWP is now contemplating to expand its effort to draw up management plan for all remaining national parks.

3. The park management plan has one major chapter or section devoted to recreation and tourism. It contains lengthy details concerning specific actions related to recreation activities, tourist services, facility development, and education or interpretive program. Such questions as what, where, how, and by whom for recreation and tourism programs are normally described in the plan. Some of management plans even determine the number of visitors the park can absorb during certain time period (carrying capacity) without affecting its ecosystem and component parts. Some have visitor impact management (VIM) schemes for enforcement and implementation.

4. Visitor facilities in all parks are designed and developed by DNWP through the contractors. Various visitor services are catered by park personnel, including accommodation, foods, recreational equipments, souvenirs, nature interpretation and safety. However, the group tour organized by tour operators normally has its own guide to cater some particular services while in the parks.

5. The use fee is normally charged to the visitors for most services including the entrance fee. The park revenue can then be allocated back to the park to maintain those facilities and to support other management activities.

6. Local communities can also offer their services the same as park personnel on the perimeters of the park and since community-based tourism has been promoted for some time, a number of communities along the park's boundaries have become viable options for both Thais and foreigners who seek different experience in visiting national parks. It should be noted here that there are at least 50 communities known to date to use 47 national parks as the key destinations for taking their client. Some of these communities are even allowed to voice their opinion and suggestion toward the park's tourism plan and operation (Emphandhu, 2005).

7. Most key national parks, with support of central office in Bangkok, have their own information brochure and variety of booklets available as the tool for tourism marketing. However, several TAT campaigns on different occasions and means help national parks becoming the popular tourist destinations. Such campaigns include, for example, the monthly Tourism Magazine, the Unseen Thailand, and other associated websites. Other promotion and marketing are done through all types of media like newspapers, TVs, radios and most Thai air carrier's on flight magazines, which carry periodic stories and pictures about different national parks.

Budget allocations for protected area planning and management

Budget allocations to support DNWP functions are made within MONRE. As protected areas are located throughout the country, DNWP's Finance Division then transfers funds to its 21 Regional Offices. Prior to the reform of government in October 2002, the budget for protected areas was allocated to RFD. Table 8 shows allocations of expenditure by RFD to different programs from 1996 to 2000. Total expenditure by RFD declined during the period, with most of the decrease relating to forest conservation activities (ICEM, 2003). The tourism development program was formulated in 1999, and its budget focused on national parks. Approximately half (50%) of all budget allocations went to wages and salaries, one quarter (25%) to structures, land and building materials, and one quarter (25%) to other items.

Table 8 Program expenditures of the RFD from 1996-2000 (million baht)

Budget item	1996	1997	1998	1999	2000
General Administration	1,549	1,427	1,199	1,160	1,146
Forest Conservation	7,287	4,066	3,426	3,473	3,528
Forest Development Program	0	4,200	3,556	3,248	3,282
Forest Research	310	332	271	275	393
Tourism Development Program (in the form of a loan)	0.279	0	0	60	66
Total	9,148	10,026	8,454	8,219	8,416

Source: International Center for Environmental Management (ICEM, 2003)

Table 9 shows allocations to forest conservation in 2000 within RFD's budget, within the Ministry overall, by all relevant agencies and within the national budget. Forest conservation accounted for about half (50%) of the RFD budget, 22% of the Ministry budget and 0.4% of the total national budget.

Table 9 Budget allocations for forest conservation in the year 2000

Budget item	Million baht	Forest conservation expenditure (% budget)
Forest conservation in RFD	3,528	-
Total RFD budget	8,416	41.9
Budget for Ministry of Agriculture and Cooperatives	16,045	22.0
Total budget – all agencies	93,547	3.8
National budget	910,000	0.4

Source: International Center for Environmental Management (ICEM, 2003)

In addition to the annual budget allocation, national parks are the only type of protected area that has additional funds for the management and collection of revenue generated from entrance and accommodation fees and fines. There are a number of national parks, particularly those popular with domestic tourists that do not yet collect entrance fees. Part of the revenue generated from these sources is channeled into a central fund within the Department and managed by the National Park Revenue Committee of DNWP.

Annual income from each national park is divided into 4 ways. The first 5% of the total revenue is transferred to the sub-district (Tambon) Administrative Organization (TAO) through the Department of Local Administration, Ministry of Interior. 10% of the remaining revenue returns to the park for improving its visitor services, for example, through the hiring of temporary staff as guest house cleaner or nature guides. A further 50% of funds remaining also return to the park for protection activities and staff capacity building. 40% from all parks goes to the National Park Revenue Fund, and is distributed to each park accordingly to project proposals submitted to and approved by the Department's Revenue Committee. The fund provides extra budgetary support for a park to cover its *ad hoc* activities and initiatives (ICEM, 2003).

In sum, Thailand has abundant and quality tourism resources spreading over all regions of the Kingdom. The protected area system, national parks in particular, has provided as the essential pillar for ecotourism development as it contains rich and valuable assets for such endeavors. The current Government Policy towards the tourism industry is clear and has meaningful implications on ecotourism development. The Ministry of Natural Resources and Environment's (MONRE) Department of National Parks, Wildlife and Plant Conservation can use this opportunity to fully develop and manage ecotourism resources based upon the Ecotourism Policy and its own policy framework (Chettamart, 2003).

Background of the Study Area

Location

The study area of KPM is the name of a mountain connecting Khao Kamphaeng; the South and Southeastern parts are next to Khao Yai National Park. The part of greater Khao Phu Luang National Forest Reserve covering an area of 18 km^2 or 11,250 rai (6.25 rai = 1 hectare) with an elevation of 800 meter above sea level in Wang Nam Khiao Sub-district and District in Nakhon Ratchasima Province is geographically identified as KPM. KPM is located in the buffer zone i.e. North-eastern edge of Khao Yai National Park, about 240 km (150 miles) away from Bangkok (see map in Figure 4).

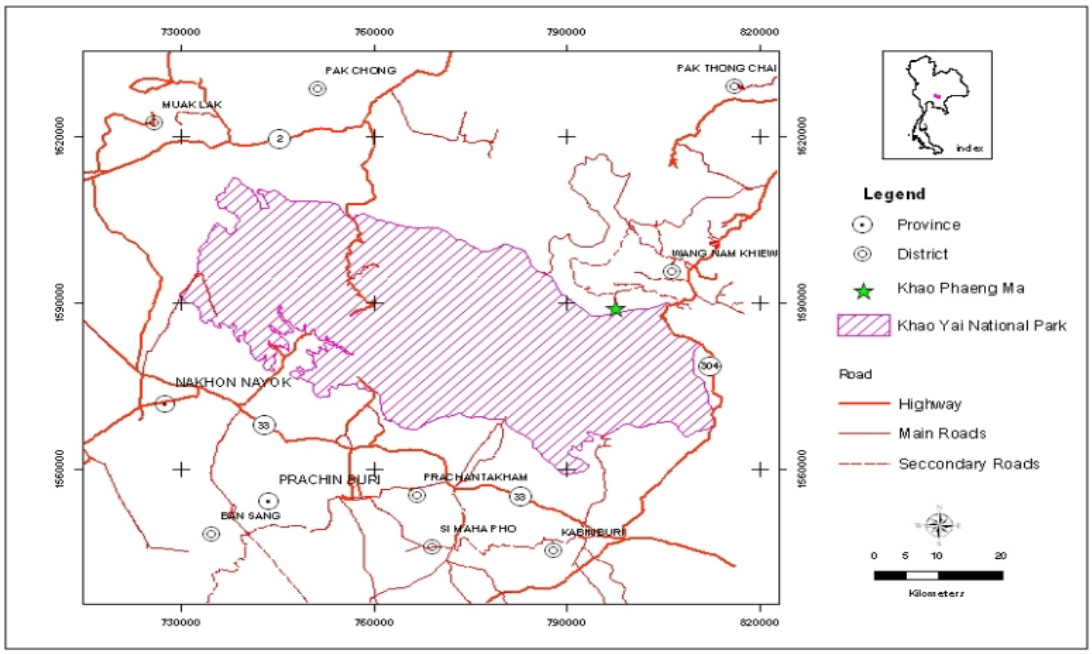

Figure 4 Location and transportation networks of the study area

The KPM, locally known as “mountain of fire”, lies in the North-eastern part of Thailand between 14˚ 05′ to 14˚ 15′ north latitude and 101˚ 05′ to 101˚ 50′ east longitude at the south-western edge of the Korat Plateau.

Transportation Networks

Several modes of travels are available for visiting KPM area. By car, from Bangkok, on highway 1, then highway 2, to Pak Chong, turning south, on highway 2090, about 55 km to the study area. One can travel by public buses to Nakhon Ratchasima run every 30-60 minutes from Bangkok’s Morchit Bus Station, stopping at Pak Chong, from where pickup, truck, and taxis run to the project entrance. The last part of about 4 km is an unpaved road upon reaching the top of the mountain. The location and transportation network of KPM (the study area) is shown in Figure 4.

History of Human Settlement and Forest Degradation

Before 1965, it was legal to cut forest around Khao Phu Luang Forest Reserve (it is named Khao Phang Ma now), and a lot of people came from Khorat (Nakhon Ratchasima), Ubon Ratchathani, Lobburi and Saraburi to take many areas for slash-and-burn agriculture (Bidayabha, 2001; WFT undated). They cut the forest around KPM for planting cassava, corn, cotton and castor bean etc. As a result, the remaining forests disappeared. Remnants of their encampments can still be seen. Later on, the loggers settled in the area to clear/encroach new land for agriculture. A few years later, in 1968-1970, a highway 304 was built from Khorat to Kabinburi (a district of Prachinburi). When the highway was finished, this encouraged many people transfer to new frontier areas conveniently.

During an interview with Uncle Pipat Kampirat, a chief of KPM village told us that during 1967-1973, KPM areas were taken by many people and some big trees were cut to plant corn fields mostly. The economic development plan of the government promoted and supported many people to plant corn, cassava, and cotton for export. But later, around 1977-1981, the price of corn became lower and plantations in high remote areas found it difficult and expensive to transport products to market. Then many villagers that owed money started to exchange the lands with their debts to the rich people (an important rich man in this area is Mr. Chalor Uthai).

Uncle Pra Pop, a villager who had moved in from Surin, told us that he began to plant corn around KPM about 1973 by buying land from other people (300 baht/rai). At that time, there were large fields of corn around but there were still some small populations of wild animals such as barking deer, samber deer, wild pig, gaur and medium sized carnivores. But as many more people moved in this area, so there were much more hunting and tree cutting. Then wild animals, especially gaur, escaped to the deep forest of Khao Yai National Park.

Later, around 1982-1987, the villager who had planted the corn decided to move back down to the plain areas and uncle Pra Pop did that also. He exchanged the land with Mr. Chalor and went down to farm on the land below. Many villagers that moved down at that time settled in the present villages of KPM.

Conceptual Framework of the Study

The conceptual framework i.e. concerned objectives of the research, the relationships of the variables, the planning process, methodology, data sources and techniques used in this research are shown in Figure 5.

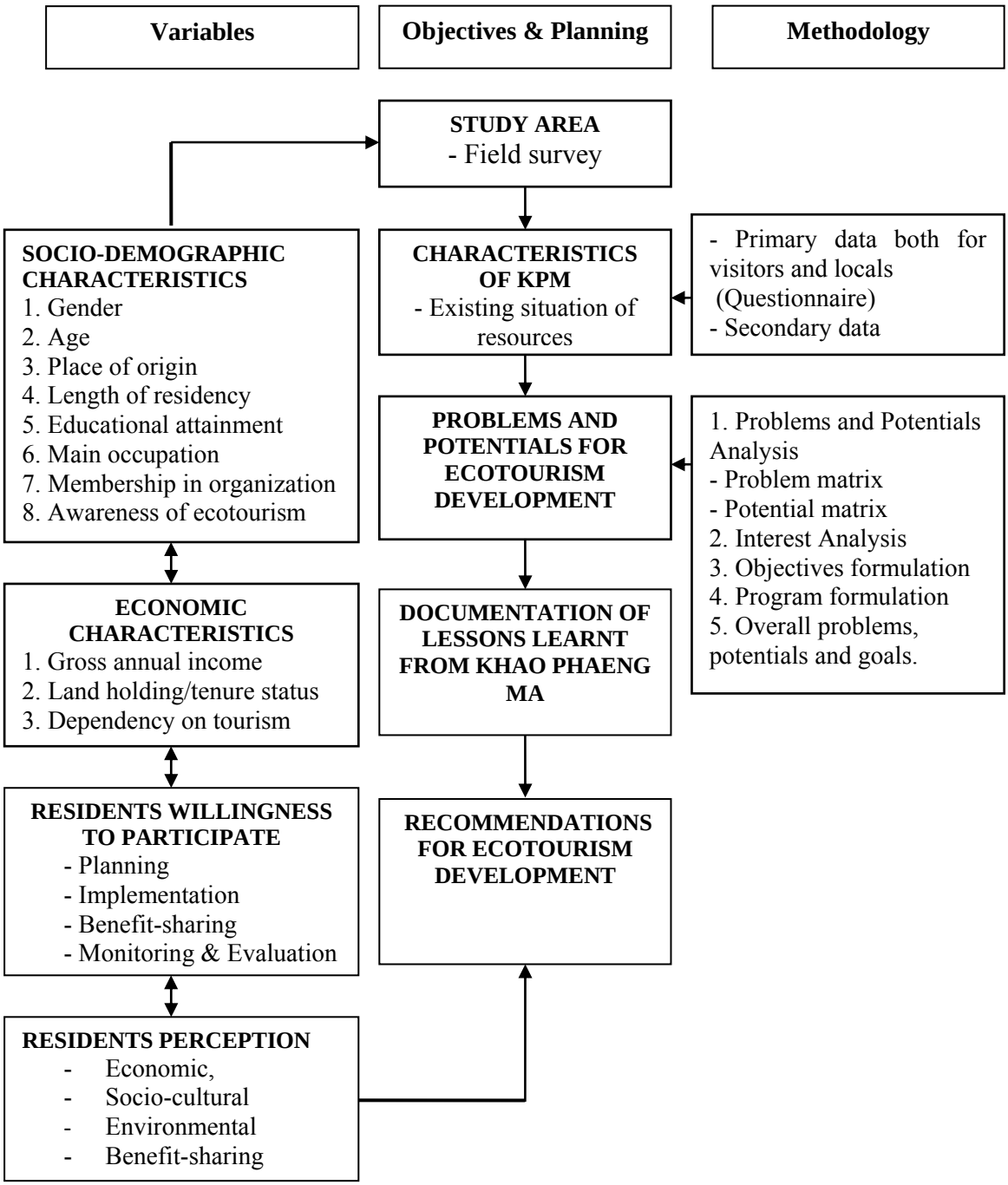

Figure 5 Conceptual framework showing the variables and methodology of the study

Places (destinations) that allow tourism development without the benefit of planning often suffer from environmental and social problems, increased costs of conflict resolution, and from declining competitiveness as destinations (Butler, 1999).

A general rule is that zones designated for recreation and tourism development require management plans. Planning can offer methods for alleviating past mistakes, for preventing present mistakes, and for reducing future errors to some probabilistic minimum. More specifically, Dowling (1993) affirm that visitor and community participation in the development of these plans is essential. For Getz (1987), this procedure is widely viewed as a way of maximizing the benefits of tourism to an area and mitigating problems that might occur as result of development. Therefore, in this study, both visitor's and local community participation is their ability to influence the benefit of ecotourism development that has an impact on them.

The review of related literature and theoretical framework has revealed that type of visitor and community participation in sustainable tourism development is related to some selected variables. Thus, the variables related to the sustainable tourism development through visitor and local community participation as defined in this study include:

1. Socio-demographic characteristics such as level of educational, occupation, length of residence, and awareness of ecotourism development.

2. Economic characteristics such as, gross annual family income, land holding (farm) size and land tenure status.

3. Environmentally-related attributes such as, satisfaction with the existing tourism activities, environmental awareness, socio-cultural sensitivity and sharing in benefits from natural resources.

Planning Process and Methodology of the study

1. Situation Analysis

Local's information was gathered from questionnaire survey (primary data), as well as, from secondary data. Most of the tourism data were obtained from the visitor survey by employing a detailed questionnaire. Field observations and interviews on the current tourism situation at KPM were conducted by the researcher to supplement the secondary data.

2. Problem and Potential Analysis

This study started and concentrated its activities with the problems as a point of departure. A problem defined as a statement of deficiency between what exist now and what is expected. Problems at KPM rose since the present situation had become unsatisfactory for each interest group at KPM. To help show all the problems and identify relationship among the problems, a problem matrix is prepared. Each problem

is analyzed in terms of effect and cause. The frequency of the relationship will be determined. The significance of the problem matrix is to know the cause-effect relationship which will be helpful in making next steps.

Potentials are development opportunities amenable to utilization within the means that are already available or can be made available. A potential is a factor which helps to achieve certain objective(s). Potentials of the reforestation project at KPM could be natural, infrastructural, institutional or interactingly derived. Basic potential is defined as a potential which is existing. Derived potential is a potential which resulted from certain combination of basic potentials. For the further analysis, a potential analysis matrix showing all the basic potentials and the derivations is prepared.

2.1 Interest analysis

The next step after the analysis of problems and potentials at KPM is the interest analysis. The purpose of this analysis is to make the conflicting interests of several interest groups which exist in the project area more clear. A table of interest analysis is prepared to perform the problems, needs and potentials of each interest group.

2.2 Objectives, alternative programs and goals formulation

Based on the problem matrix some objectives are identified. These objectives are the results of problem matrix and are needed to solve the problems identified in problem matrix. Furthermore, to solve the crucial and top priority problems alternative development programs were also formulated based on certain criteria. Finally, statement of overall problems, potentials and goals are identified which are the guiding principles behind all activities to be undertaken for ecotourism development at KPM.

3. Lessons Learnt Documentation

Lessons learnt from KPM indicates the reasons behind the success of reforestation (community forestry) project at KPM, that is, how KPM become from a conflict to co-management and from a bare mountain of Imperata grass and wild fire to a secondary forest, and finally, has become an attractive ecotourism destination.

4. Recommendations

The description of the ecotourism development projects and its future programmes are in the recommendations. Following the problem oriented approach of this study; recommendations contain the project proposals for solving the problems at KPM.

MATERIALS AND METHODS

This chapter discusses about the study area, reasons for selecting the area as the study concentration, collection of both primary and secondary data, sampling methods, data collection methods including reconnaissance survey, household surveys and semi-structured interviews, group discussion, observation, and the techniques used in the data analysis.

Research Materials

In this research, a structured interview schedule was designed and used as research instrument to elicit appropriate responses. It consists of socio-demographic, economic, social and psychological (behavior) characteristics of respondent's; their perception on impacts of tourism, type of participation and willingness to participate in ecotourism.

The interview schedule was prepared in English and translated into Thai language, and finally into northeast of Thailand dialect during the actual interview. The interview schedule was pre-tested on 30 participants who were not part of the sample for its reliability. The 'pre-tests' (see Appendix) were conducted to check content validity, that is, to allow correction, modification and improvement of the questionnaires. Open-ended questions were used to facilitate the analysis and to avoid confining their answers. Rapport before and during the interview was established by the researcher and the interviewers to avoid apprehension from the respondent's.

Research Design

Research design in this study combined between qualitative and quantitative data as shown in Figure 6.

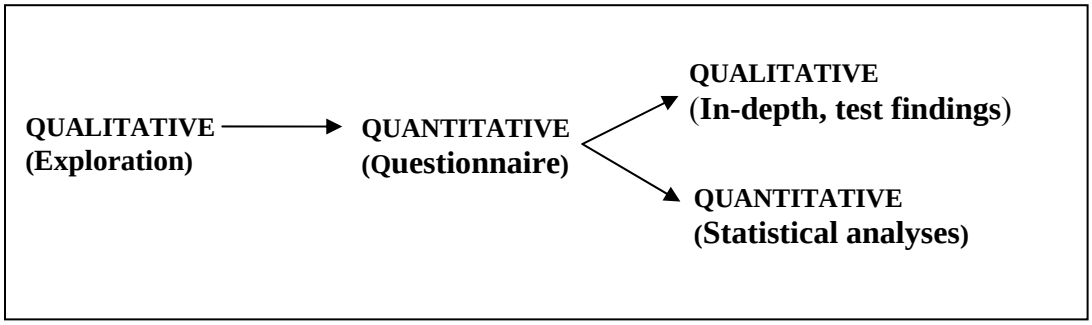

Figure 6 Research designs integrating qualitative and quantitative method

The design above alternated the two kinds of data collection, beginning with exploratory field work, leading to the development of quantitative instrumentation, such as, the questionnaire. The questionnaire findings was further deepened and tested systematically with the next round of qualitative and quantitative works. Thus, this study was in the form of the qualitative-quantitative linkage.

Sampling Method (Population and Sampling Technique)

Population of the study was two types:

a) The tourists or visitors (both Thai and foreigner): The "sampling strategy for visitors" was accidental sampling and no more than one person per group was chosen in order to avoid duplications and 100 interviews were conducted.

b) The community of KPM, Wang Nam Khiao sub-district, Nakhon Ratchasima Province, northeast of Thailand. Purposive sampling technique was used to select one sub-district named Wang Nam Khiao and the three target villages, namely: Ban Khao Phang Ma, Ban Poh Thong Pathana, and Ban Klong Sai. The household level was considered as based "sample unit" and the accidental sampling method was used in selection of respondents. The total number of sample (sample size) was determined by using the Yamane (1970) formula as cited in Kaiwan (2001):

$$n = \frac{N}{1 + N.e^2}$$

Where,
n = sample size
N = population size
e = precision or desire margin of error (7%)

The total number of households was 309. This study employed 7% sampling error instead of 5% because of the practical field situation, as well as, limited time and budget.

In order to achieve a 93% confidence level, and a 7% sampling error, the required sample size was approximately 123 respondents. To be more accurate, the study used 130 respondents (see Table 10), using accidental sampling technique, to get the sub-sample in village Ban Khao Phang Ma, Ban Poh Thong Pathana, and Ban Klong Sai to be 60, 20 and 50 samples respectively.

Table 10 Distribution of selected respondents by village

Village	Number of households (N)	Sample size (n)	Fraction (n/N)
Ban Khao Phang Ma	141	60	0.42
Ban Poh Thong Pathana	45	20	0.44
Ban Klong Sai	123	50	0.40
Total	309	130	0.42

Data Sources

Primary Data Sources

Primary data included information related to: a) socio-demographic and socio-economic characteristics of the study area; b) household level information; c) local's perception on the impacts of ecotourism; d) local's willingness to participate; e) tourist market study (i.e. profiling the ecotourists, their behavior, needs and preferences); and f) other qualitative information. It was derived from standard questionnaires, semi-structured interview, and group discussion.

Secondary Data Sources

Secondary data was gathered or extracted from various sources such as:

1. Wildlife Fund Thailand (WFT) – the NGO responsible for implementing the project;

2. Faculty of Forestry, Kasetsart University – the academy that facilitated to conduct this research and helps to frame the issues of ecotourism;

3. Royal Forest Department (RFD) – the resource management Government agency;

4. Tourism Authority of Thailand (TAT) – the agency responsible for tourism promotion and marketing; and

5. Library, internet/electronic document, previous publications, project reports, official records, management plan and other literature about the research site.

Data collection methods

To ensure reliability and reduce misinterpretation the method of 'triangulation' was used. Triangulation is another name of convergent/content validation, convergent methodology or mixed method/multi-trait (Creswell, 2003). These various notions share the conception that qualitative and quantitative methods should be viewed as complementary. Triangulation is broadly defined by Creswell (2003) as "the combination of methodologies" in the study of the same phenomenon. Hence, from the conceptualization to analyzing phase, multiple methods and techniques that were applied or used are described below:

Reconnaissance survey

An initial survey was conducted to acquaint with the area and to collect some basic data about the physical setting, land use practices, and the people and culture. Some logistical arrangement and introduction to the visitors and villagers/community were discussed during this visit.

Ecotourism Resource Survey

The first-phase was to compile the required data, both for mapping purposes and to obtain a better understanding of the resource potentials for ecotourism development at KPM. It consisted in surveys in the place with emphasis on subjects related to the natural resources, infrastructure and visitation systems in way to get clearer picture of site, the actual position in the management structure and other analyses and interpretations providing the basis for planning and management of the recreation by using an "inventory form" (adapted from Ritchie and Grouce 2003; see Appendix-I). Therefore, important information to the development of tourist activities was gotten, such as aspects of the physical environment (climate, geology, soils and hydrology); aspects of the biological environment (vegetation and wildlife) etc. In addition to the inventory form, un-structured survey questionnaires, and formal and informal interviews with recreation professionals, ecotour operators, resource managers are also employed.

Visitor and household survey

Both visitor and household survey was conducted with a series of "questionnaire construction" (see Appendix II and III). The questionnaire was translated into Thai language. Questionnaire has two objectives: (1) to collect opinion on existing situation of resources being used in their ecotourism project and how importance these resources are in terms of meeting the ecotourism objectives, and (2) to collect opinion on required instruments for ecotourism in order to obtain successful (sustainable) tourism.

Interview method

One quantitative method in the field research is the interview or questionnaire study. The interview method was employed to collect data from the users (both visitors and local community) of KPM. Personal interview, unstructured and semi-structured interviews were conducted with relevant individuals with specific knowledge about particular topics including tourists, officials of WFT, TAO's member, village/community Headman, and villagers to get an in-depth information on questionnaire surveys and clarify certain issues (Appendix II, III and IV). The criteria for choosing the personal interview method as a data collection method were the appropriateness, validity, time and expense.

The respondent's were personally interviewed by the researcher and interviewers. The interviewer hired were the M. Sc. student of Conservation Department, Faculty of Forestry, Kasetsart University, Bangkok, Thailand. They were selected based on their ability to speak and understand in English and local/northeastern dialect. The interviewers were trained on how to carry out an interview and were briefed on the purpose and importance of the study. Each interviewer was allocated certain number of respondents to be interviewed to meet the time-table. The completed interview schedules were checked and edited at the end of each day to identify any missing item(s) for a re-interview whenever needed.

Participant observation

Participant observation is one of methods in qualitative research. The observation method is appropriate for studies of almost every aspect of human existence and is useful for both collection and triangulation of information. Through participant observation, it is possible to describe what goes to, who or what is involved, when and where things happen, how they occur, and why – at least from the standpoint of participants, things happen as they do in particular situations. Visual inspection and questionnaire surveys among visitors and residents are undertaken simultaneously. Observation during discussion allows the researcher to get more insights in the situation. It has some considerations why this method was used in this research:

- A little is known about the phenomenon.
- There are important differences between the views of insiders as opposed to outsiders.
- The phenomenon is hidden from public view.

In this method, the researcher was used "observer as participant", because the respondents (tourists and community) knew that researcher was studying on their environment and culture.

Moreover, during the research period with visitors in the area, the technique of participant observation involves gathering information about tourist's behavior without their knowledge. Details of visitors characteristics obtained from observation were used in this research as a way of check visitor's behavior, activities and attitudes. Such detail was used also as a way of check the accuracy of the questionnaire and to 'weight' the results of questionnaire survey.

Group discussion

A checklist was prepared for group discussion in order to guide as a scope of this study (see also Appendix-4). Group discussion was conducted to get more details and investigate the collective vision. Moreover, it promotes common understanding and also confirms the questionnaires.

Data analysis

The result of the study was shown in descriptive and inferential statistic forms. Simple frequency distribution, percentage (%), mean (average), range and standard deviation, where applicable, were employed to examine the quantitative data into more functional design. Simultaneously, qualitative information from open questions and dialogues with key informant and group discussion were scrutinized through simply sorting out the most consensuses from the various responses and describing their arguments in some cases. This type of analysis assisted the understanding the situation in deeply and details.

Data Measurement

Local resident's perception on impacts of ecotourism development - This is respondent's view about the ecotourism in terms of group objective, duty and right of members. In order to assess the perception of local resident's, the study employed the "five-point scale" index. It was measured in a strongly agree to strongly disagree. This 5-point scale allows recording positive as well as negative responses indicating agreement and disagreement respectively. The responses are recorded at 5 values namely: (i) strongly agree = 5; (ii) agree = 4; (iii) neutral (neither agree nor disagree) = 3; (iv) disagree = 2; and (v) strongly disagree = 1, then the scale can be considered as follows:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-2	-1	0	1	2

The computational formula for calculation of perception index stands as follows:

$$\mathbf{I} = \frac{(-2)\times f_{sd} + (-1)\times f_d + 0\times f_n + 1\times f_a + 2\times f_{sa}}{N}$$

Where,

I = Perception index ($-2 \leq I \geq +2$)

f_{sd} = frequency of responses indicating strongly disagree

f_d = frequency of responses indicating disagree

f_n = frequency of responses indicating neutral

f_a = frequency of responses indicating agree

f_{sa} = frequency of responses indicating strongly agree

N = total number of observations

This scale consisted of 27 items which categorized into 7 items of economic impact, 10 items of social and cultural impact, 8 items of environmental impact, and 2 item of advantages and disadvantages of ecotourism.

The index value is categorized into two levels as follows:

(-2) – 0 = Negative perception
0.01 – 2.0 = Positive perception

RESULTS AND DISCUSSION

Part – I: Existing Characteristics of Khao Phaeng Ma

Ecotourism needs to make use of outstandingly beautiful but sensitive and fragile ecosystems, commonly untouched at present. The KPM Forest Reserve undeniably is such an environment. It is not only perfectly suitable in terms of natural beauty and magnitude, but also embedded in a rich cultural neighbourhood and a landscape of outstanding magnificence. The purpose of the following chapter is to give a brief introduction to the existing situation and to explain the issues that could have some impact on the development planning of the proposed ecotourism venture.

1. Biophysical Resource: Landscapes

The factors or elements of the "environment" i.e. the natural resource features that structure or influence the KPM's tourism experiences or tourism potentials are its physical and biological resources. As biophysical resources include the physiography and climate, most particularly the overall nature of the landscape, scenery and the climate of the destination, it defines the nature of the environmental framework within which the visitor exists and enjoys the destination. In effect, it is the visual and sensual pleasure derived from these elements that provides some of the most fundamental physical enjoyments of tourism. Because so much of the tourism experience is associated with the physical resources of a destination, the physiography and climate of a destination together constitute a factor that can be so important that it dominates over other factors.

Covering an area of 11,250 rai of landmasses, this tropical zone of KPM possesses a variety of outstanding geographic and topographic landscapes: watersheds, valleys or creeks, flood plains, elevated plains, hills and mountains. It has very favorable soils and climate, which supports agricultural production. Unique landscape features and scenery of KPM is the combinations of all of the following factors.

1.1 Physical Resources

Topography and landforms

Topography and landforms are the general shape of the surface of the earth (topography), and the surface structures that make some geographical areas unique (landform). The topographic elevations at KPM range from near sea level to over 800 meter above mean sea level (TAT, 2002; WFT undated). Along the west and northward it is characterized by lower, undulating terrain, generally KPM is hilly or mountainous (see Figure 7).

Figure 7 KPM possesses a variety of unique geographic and topographic landscapes

Geology and soils

Geological history of an area refers to the surface materials or the nature of the materials making-up the earth's surface such as soils, sand dunes, beaches, caves, rocks, minerals, and fossils etc. The geological history of KPM has been several cycles of sedimentary deposition, uplift and erosion, interspersed with periods of volcanic activity. During the Paleozoic, the KPM area was covered by sediments from a landmass. These sediments now form the KPM's bed rock, called the Kanchanaburi series. The last major geological activity before the present era of erosion was volcanic eruptions, resulting in rhyolite flows. Most of the rocks visible at KPM today are from volcanic eruptions (NPD, 1987).

The soils of KPM are influenced by its topographical features. Mountainous landscapes are predominated by sandy soil and clay intermingled with sandy-clay but soil depth varies widely. Soils at the foot of mountains are of colluvial complex. There are several soil series at KPM: Pak Chong, Muak Lek, Kabinburi, Chiang Mai, Korat, Khao Yai, and Lam Narai.

Watersheds and water resources

The hydrology of KPM is one critical aspect of area's biophysical features, both as it concerns conservation and tourism inside the reserve and sustaining agriculture and industry outside the reserve. It is the watershed area of 7 streams of Lum Pra Proeng River, drained to the Mool River, which have both the quality and quantity to nourish communities in 24 villages in Wang Nam Khiao and Pak Thong Chai Districts of Nakhorn Ratchasima Province. The main waterway with some small branches at KPM is the Khlong Sima waterway and is very important as wildlife habitat. In dry season, some branches of Khlong Sima do not have water but Khlong Sima has drained all season that is enough for wildlife (Bidayabha, 2001).

Weather and climate

Along with geology, climate is the prime controller of the physical environment, affecting soils, vegetation, animals and operation of geo-morphological processes such as wind. The KPM's climate is tropical. Heavily influenced by the topography and the south-west and north-east monsoon; KPM experiences three seasonal changes: hot, rainy and cool. The average annual temperature lies at about 22.4˚C; the hottest months are April and May with its temperature rising about 28˚C. December and January are the coolest months where the minimum temperature is around 17˚C. Average humidity is about 86%. Most precipitation falls during the mid of May to October, an average annual rainfall is 1500 mm as has been recorded at KPM during the period of 1997-1998 (Bidayabha 2001; WFT undated).

1.2 Biological Resources

Plant flora: Trees and forests

Recreation or tourism quite often is dependent on plant life directly (taking pictures of unique plant species) or indirectly (trees acting as a wind barriers for skiers). Originally KPM was natural evergreen forest and dry evergreen forest with lots of wild animals before, but have almost entirely vanished since the past 25-30 years (TAT, 2002). The forest was destroyed by illegal logging, poaching, encroachment, slashing-and-burning for agriculture and commercial logging has replaced native forest areas. Now, it is mainly a secondary forest/habitat (Figure 8).

Figure 8 Flora (secondary forest) of KPM showing that previously it was a forest of big trees.

The 11,250 rai KPM Forest Reserve is covered with Tropical Evergreen (Secondary) Forests, very little of which has even been explored. Road-side overlooks afford some breathtaking views of KPM's spectacular precipitous terrain, including some nearby hills. The leaves of "poor man's umbrellas" can be seen along the road and several short trails lead into the forest offering a chance to glimpse the hundreds of species of herbaceous vines, birds and other creatures that the forest is home for. Many of the country's endangered animals live within the forest, including Gaurs, deer, wild

pigs, and boars. A visitor center inside the project area has some information about the forest.

The principal tree species present at KPM include: *Dipterocarpus spp*; *Afzelia zylocarpa*; *Lagerstroemia calyculata*; *Anisoptera costata*; *Hopea odorata* etc. The ground flora is composed of various grasses, small-size bamboo and herbaceous vine species. Some areas have been covered with wild Banana also. In addition to this, various rare and endangered mixed plant species have been planted by WFT, the NGO responsible for this area, under the KPM's Degraded Forest Rehabilitation and Wildlife Conservation Project, emphasizing those species which can store water and at the same time provide food for wildlife, such as, *Ficus*, *Banyan* and *Java plum*. At present, some parts of the area are going rapid succession. The successional dominant species for ground vegetation are: *Tueraria thomsonii* (Pak Peed, Khruea Ee Thao), covering about 29%; grass *Imperata cylindrica* (Yah Kha) 23%; *Eupatorium odoratum* 22%; and wild banana (*Musa acuminata*) 4% (Bidayabha 2001; WFT undated).

Animal fauna: The last hope for the gaur

Wildlife or animal fauna can play a significant role for recreational activities that are both consumptive (e.g. hunting) and non-consumptive (e.g. bird-watching) in nature. Although none of the original vegetation remains, the ecology and climate of the area of KPM still supports some wildlife in the secondary forest of KPM. The KPM provide the last hope for the Gaur may still survive in Thailand (see Figure 9).

Figure 9 Gaurs (*Bos gaurus*).

Few sites in Thailand can rival KPM for its opportunity to view - the largest wild cattle. The open grasslands and savannahs of KPM provide excellent grazing for the KPM's large herbivores and good opportunities for ecotourists (wildlife enthusiasts) to view these animals in fairly open conditions.

Gaurs are very alert animals. A chance to see them in a natural habitat is rare. But here, at KPM gaurs are seen easily and are not scared by being close to humans. They are obviously safe from other large predators, including humans. Chang Pa Valley is a place where gaurs can be seen very easily. Gaur that inhabits KPM is a globally

significant wildlife. This primitive cattle species could provide genes valuable in the production of disease-free strains of domestic cattle (Elliott et al. 2001).

The total number of gaurs in KPM found in 2002 was about 60 (TAT, 2002). The latest survey of wildlife undertaken in this research recorded over 90 of gaurs present in the area (WFT undated), which is the largest number since they have returned to KPM. Besides gaur, more than 100 kinds of birds have been reported, including various kinds of fauna, such as, Hares, Wild Boars, Asiatic Black Bear, Wild pigs, Barking deer, Samber deer, civet plus several species of bats, butterflies, squirrels, rats, snakes and mice have been seen (TAT, 2002).

2. Main Facilities and Services

To develop ecotourism some necessary facilities (see Figure 10 and 11) already existed at KPM. These are:

Roads and utilities: There are two access routes by road to the KPM from Bangkok (the capital city of Thailand) and other Provincial cities which makes visiting the site easy and convenient.The electricity services are available in the Headquarter.

Lodging: Tourist's who want to stay over-night in the reserve, need a special prior permission from the Wildlife Fund Thailand, the NGO responsible for the reserve area. There are some campgrounds available for this purpose.

Visitor-cum-training centre: The visitor centre, located in the up-hills of the project area can hold about 50 people. Though it contains various natural and geological displays and information about the ecosystem and wildlife restoration history of the area; but the information about forests and wildlife restoration/conservation issues, and interpretation programs are very few due to limited budgets and workforce (personnel).

Figure 10 Main facilities at KPM: (a) approach road [right], (b) lodging/campground [middle], and visitor center showing some geological information [left].

A network of nature trails/forest walks: The nature trail of KPM is a circular-walking path (see Figure 11) that leads tourists to the rebirth of this place step-by-step. The total walking distance is 18 km. There are 9 natural interpretation spots or stations, including distance signage at every 50 meters along the way. These are:

- The first station: Lalang (Imperata grass) – A trace of the past;
- The second station: Wild Banana – Moisture indicator of the wild;
- The third station: Ecology of the forest;
- The fourth station: A water source of the forest;
- The fifth station: Fern, an ancient old plant;
- The sixth station: Fig tree and salt-lick;
- The seventh station: Traces of wild animals;
- The eighth station: Mountain ridge, water flows and human climbs;
- The ninth and the last station: The return of gaur.

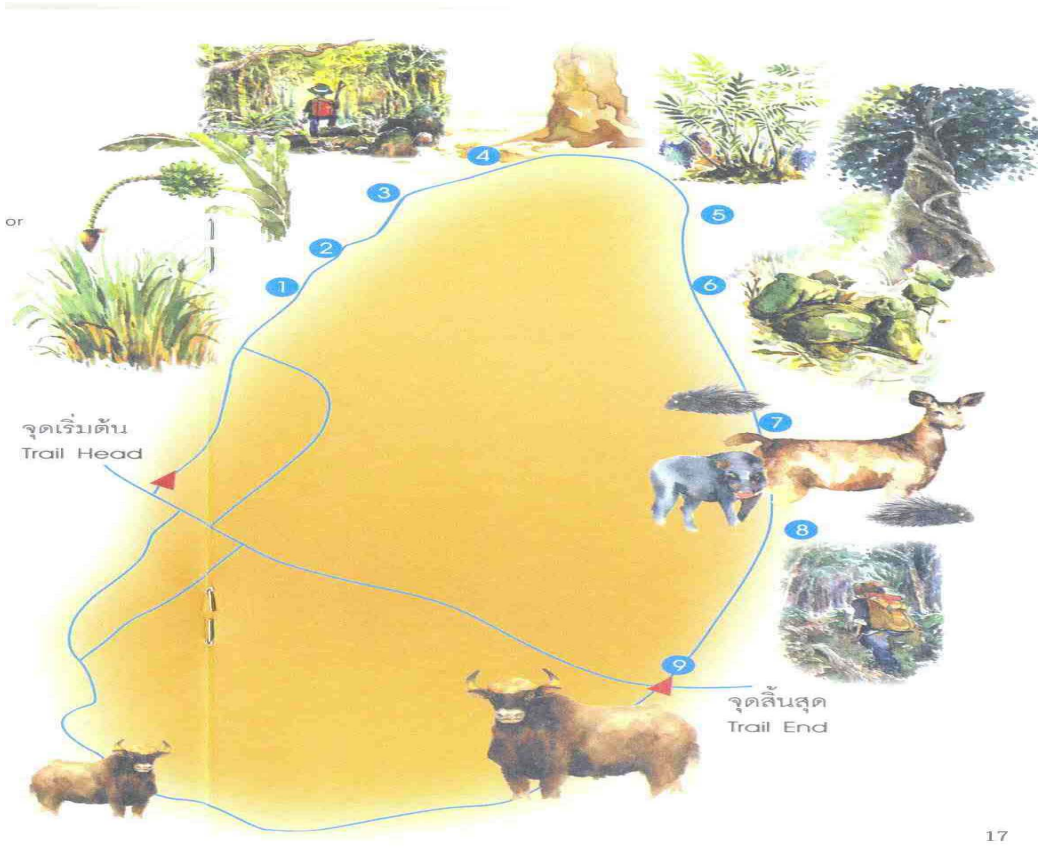

Figure 11 Nature trail at KPM with nine interpretive spots

Other facilities: 1) Source of water from shallow (tube) wells, and toilets are located in some tourist spots; 2) Wildlife observation spots; 3) Parking, camping or picnicking ground; and 4) Open spaces.

3. Attractive Sites/Sceneries

There are 7 main attractive sites or sceneries at KPM (see Figure 12), which belongs to the three villages as follows:

Ban Khao Phang Ma (BKPM): The village Ban KPM is located in the eastern site and prior to the reforestation project area. In Ban KPM, most (60%) villagers are farmer, planting Maize, Cassava, Corn, Cotton, Castor Bean, homestead trees, integrated or co-managed forest farming and agroforestry etc. These are representative occupation of northeastern Thailand. However, in Ban KPM has more unique than other areas. Because, there is integrated agro-forestry system, thus, tourists can learn more in every step of farm-works to the processing of agricultural products and Indigenous Technical Knowledge (ITK) or nature conservation techniques.

Ban Poh Thong Pathana (BPP): This village is located in the northern site of the project. There is a district and provincial road along this village. Therefore, access to the village is safe and comfortable. Most of the house-holds have one-floor house pattern, which is popular in ISAAN (northeast of Thailand). The houses are made of timber, bamboo and cement. All above can support the ecotourism. The ecotourism activities should be learning about local cultures and conservation techniques; observing local customs, traditions i.e. traditional way of life; and agricultural study (agro-tourism).

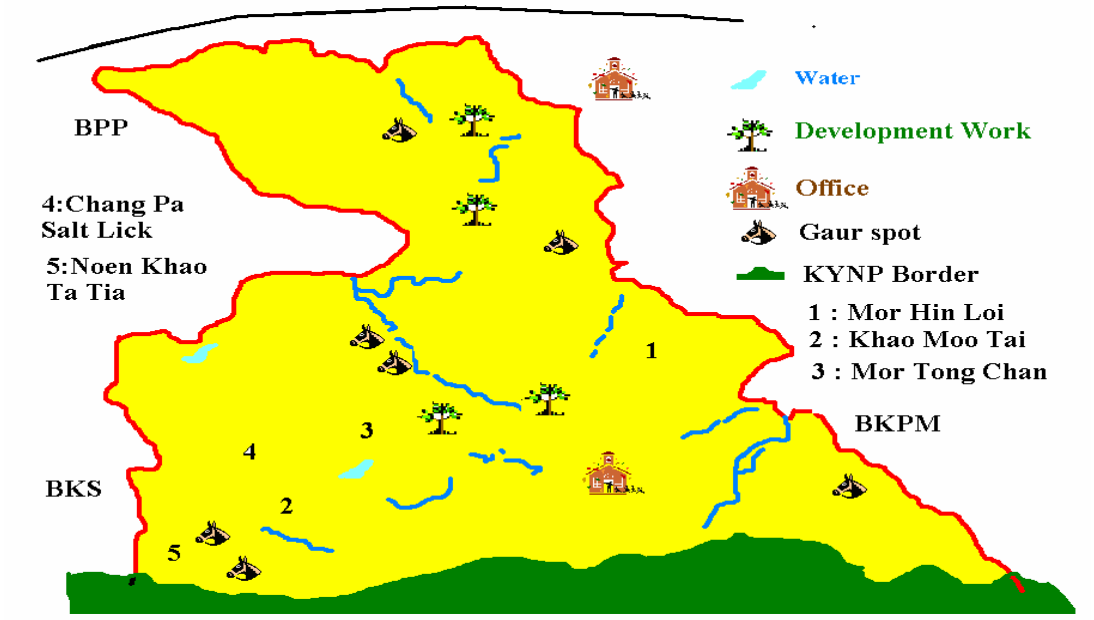

Figure 12 Attractive sites and sceneries of KPM

Ban Khlong Sai (BKS): This village is located south-western part of the project, opposite to village Ban KPM and Poh Thong Pathana. The characteristics and scenery of the village is same as previous two villages.

Mor Hin Loi: This site is mainly valleys as dominant landform, located about 1 km east from the visitor center and opposite to Khao Moo Tai. It is the center of the reforestation project. The vegetation comprised of evergreen (secondary) forest and underground succession forest. In this spot, the ecotourists can see the forest and wildlife conservation (community-based forest restoration) programs, the view of Wang Nam Khieo sub-district and KY National Park. The access is convenient but the slope is steep and the road is unpaved. The tourism activities are nature-study, viewing scenery, taking photographs, relaxing in peaceful environment, hiking, trekking, camping, picnicking etc.

Mor Tong Chan: is located near the Chang Pa valley. There are some grassland (grazing meadows) and the only salt-lick here. Salt-lick is heavily used by Gaurs and other animals. Gaurs, deer and wild pigs live actually in the forest but frequently come out to small meadows or isolated fields mostly at night and sometime at day-time to graze or bed down. This open grasslands and savannahs of KPM provide excellent grazing for the KPM's large herbivores and good opportunities for ecotourists (wildlife enthusiasts) to view these animals in fairly open conditions.

Khao Moo Tai: Khao Moo Tai mountain is located on the western side of the Headquarter and opposite to Mor Tong Chan i.e. salt-lick. Plant comprised of secondary and underground vegetation, more or less same to the Mor Tong Chan. There is a clean air circulation and comfortable temperature from the covering of the tree canopy. There are some beautiful and woody vines providing most interesting networks or routes for the movement of wild animals. The ecotourism activities are also same Khao Moo Tai as mentioned before.

Noen Khao Ta Tia: is located close to the village Ban Khlong Sai and Khao Moo Tai Mountain. It has a cliff in the south-eastward direction, which is the habitat of wildlife. It is a proper site to view Gaur, wild pigs and jungle fowls.

4. Important Ecological Areas

Certain areas of KPM, such as valleys, grasslands or grazing meadows and salt licks are especially important for the preservation of plants, animals or general environment. There are seven main valleys such as, Chang Pa, Khlong Durian, Mor Hin Loi, Noen Khao Ta Tia, Khao Moo Tai, Yang Koo and Puen Taek, (Bidayabha 2001; WFT undated). Gaur, deer, bear and wild pigs live mostly in the forest but frequently come out to small meadows or isolated fields at night to graze or bed down. These areas demand special efforts for protection and conservation.

5. Community and Cultural Resources

Culture is the acquired knowledge that people use to interpret experience and to generate social behavior (Spradley and McCurdy, 1975). Culture, then, is about the interaction of people as observed through social relations and material artifacts.

The culture and history of a destination in turn furnish a basic and powerful attracting force for the tourist. Thus, if a destination can provide visitors with a unique setting within which to experience life-styles outside their day-to-day routine work, it has a clear intellectual satisfaction from visitation.

KPM is surrounded by 5 communities/villages: (1) Ban Klong Sai, (2) Ban Klong Ee-Paew, (3) Ban Poh Thong Watana, (4) Ban Klong Durian, and (5) Ban Khao Paeng Ma, where Ban KPM, Ban Poh Thong Pathana and Ban Khlong Sai are prime target villages since they are the closest to the natural attraction, with over 1145 inhabitants (WFT undated) whose principal source of income is primarily agriculture. As mentioned previous section in "attractive sites and sceneries", the access to the community/village is safe, and comfortable. The villagers have community unites. They are friendly and helpful (hospitable) to the tourists.

Socio-Demographic characteristics of communities (local residents)

Age: The age of the respondent's of Ban KPM, Ban Poh Thong Pathana, and Ban Khlong Sai ranged from 17-70, 25-67, and 21-59 years old with a mean of 42.83, 42.45, and 40.04 years respectively.

Gender: The 130 sampled respondent's comprised 64 male (49.23%) and 66 female (50.77%).

Place of origin: Survey respondents were asked about the place of birth if they were born in KPM or the other places. Over three-quarters of respondents (76%) were born in other places, while 24% were born in KPM.

Length of residence: The majority (83%) of respondents reported that they have lived in their community longer than 15 years. About 7% and 6% were found that they have lived in their community in the range of 5-10 years and 11-15 years respectively. Only few portions (3.88%) of respondents have lived in their community less than 5 years. The mean, standard deviation and the range of residency of respondent's were over 25 years, 11 years and 1-57 years respectively.

Community's awareness of ecotourism development: The respondents were asked whether they have heard about ecotourism and if yes, from whom. A majority (93.85%) of the respondents have heard about ecotourism. About 40% heard this from WFT, while about 46% from neighbor or other community members. Only few respondents experienced ecotourism from government officials, newspaper and television program.

Economic characteristics of communities

Education: The average educational level is generally the primary level. Of the total respondents, about 12.31% were illiterate. The majority (66.15%) had primary education, while 19.23% had secondary education. Only a few respondents attained the college/diploma level.

Income: Income is an indicator for economic condition of local people. The house hold income in KPM community included earning from main and secondary occupations. The average annual household income of respondent's for 3 villages was 63,583.64 baht, whereas the range of 2,000-40,000 baht was found 45% and only small proportion (18.33%) of respondents earned higher income in the range of 80,001-500,000 baht. Findings from the range of respondents gross annual income show that a considerable number (about 37%) of respondent were still below the poverty line with annual income of 24,000 Baht and below. The average poverty line in Thailand in 2003/2004 was 1,363 Baht per month. The poverty line is specified or conceptualized as "a minimum standard required by an individual to fulfill his or her basic food and non-food needs (World Bank, 2001). Therefore, considerable portions of the local people of KPM are still poor.

Occupation: Agriculture is the primary occupation of the villagers. About 43.08% of the respondent's recognized that their main occupation is agriculture or mixed orchard farming (vegetables, maize, corn, cassava). Respondent's engaged in business/trade, employee and civil servants are 15.39%, 29.23% and 6.92% respectively.

Land holding/Farm size: Land holding or farm size is one of the significant factors in determining the overall economic condition of house hold. Nearly 60% of the respondents owned the land in the range of 0.25-10.0 rai, while the range of 10.1-20.0 rai and 20.0-30.0 rai were found about 22.22% and 8.89% respectively.

Land tenure status: The majority (67.26%) of the respondents already had their own land and the land renter was about 12.39%, while the rest (20.35%) still was as landless. Land owner in KPM, especially the migrated people (from other places/provinces), even though they came to the area for a long time ago, but still could not get land title certificate from the government, because the area is still a reserve/protected area.

6. Environmental Conditions

The current issue regarding the environmental condition in KPM is forest degradation. Forests which originally provide cover to most steep land sites help to protect the soils by dissipating raindrop energy. The deep roots of the trees hold the soil on the slopes and reduce the risk of landslides. The cover and organic matter help maintain soil structure which aids infiltration. These steep land sites tend to degrade when trees are cleared, a practice which is often associated with expanding cultivation of annual crops.

Nowadays deforestation becomes major issues for Thai government concerning hill people, aside from national security. Hill peoples/settlers, for long time ago have migrated from mountain to mountain traditionally using forests for agricultural activities by swidden cultivation. Even though right now, the local people of KPM have relatively permanent settlement, the way they live is still not separated from the forest. Soil erosion usually happened in KPM, especially in the very steep or slope land areas.

High intensity monsoon rains combined with run-off energy that can generate on steep slopes contribute to the high erosive conditions.

7. Types and Characteristics of Tourists and Markets

It is important for the industry and government to gain a clearer understanding of the profiles of tourists, to determine which kinds of natural areas may be sought by tourists as well as identifying potential impacts on the relevant ecosystems. Information required included general socioeconomic characteristics, the types of nature-based activities that are typically undertaken, and demands for different kinds of natural environments, particular features or species of plants and animals, and levels of satisfaction received in relation to expectations built by advance promotional information.

From an economic perspective tourist profiles can be important in designing and delivering tourism packages and supporting infrastructure. With improved predictions of future trends in nature-based tourism markets, appropriate planning can be undertaken to meet consumer preferences, structure the industry accordingly, and implement effective anticipatory measures to avoid or minimize potentially adverse environmental impacts.

Both Thai and foreign tourists visited KPM. Though there is no recording or registration system, the average number of visitors hosted KPM is about 200 per week (according to Mr. Som Kait, an official of WFT, during inventory in 2006). Visitor survey carried out on Thai visitors during this research (December 2005-March 2006) and expert comments showed that the visitors of KPM can be grouped as:

"Day tourists, mainly from Bangkok, the capital city of Thailand, Nakhon Ratchasima Provinces, and other neighboring Provinces of northeast Thailand".

Data/information from questionnaires revealed that most visitors visited KPM called themselves nature lovers or ecotourists.

The survey conducted at Khao Phang Ma offers the following profile of nature tourists (n= 100 respondents).

a) Geographic characteristics: Origin of tourists

The survey found that the highest (84.0%) of the visitors are from Thai and the rest 16% are foreign tourists. As shown in Table 11, among the Thai tourists, the majority (29%) comes from Bangkok – the capital city of Thailand, the second highest (13%) visitors come from the neighboring Nakhon Ratchasima Province, following 10% from Saraburi, 8% from Chornburi, 5% from Sri Saket and the rest from Kabinburi, Udon, Ubon, Surin, Petchabul, Kon Kaen, Nakhon Nayok and other Provinces; Whereas the foreign tourists are hosted from USA, Viena (Austria), Slovakia, New Zealand, India , Japan, Germany, and Finland,.

Table 11 Geographic characteristics of tourists at KPM

Origin of residence	Frequency	Percent
Bangkok	29	29
Nakhon Ratchasima	13	13
Saraburi	10	10
Chornburi	8	8
Sri Saket	5	5
Other provinces	19	19
Foreign tourists	16	16
Total	100	100

b) Socio-economic characteristics of visitors

Some researchers have examined socio-demographic characteristics to increase understanding of ecotourists and to improve marketing and management efforts. Thus, in an effort to provide more detail to the profile of the visitors, the survey sought information on age, educational level, gender, occupation and income from respondents.

Age: Respondents age is ranged between 15 to 60 years, with an average age of 36 years (see Table 12). The most of the visitors were over 30 years of age. The largest group of visitors is predominantly aged between 30 and 49 years of age (52.1%), followed by less than 30 years of aged between 15 and 29 (36.2%) and fewer visitors aged 49 years old or over (11.7%). Based on the results, suppose that the Khao Phang Ma Forest Reserve (KPM) was visited by young people, mainly couples in company of their children, who are people having create their family and come to the area for enjoying the outdoor recreation.

Table 12 Age of ecotourist surveyed at KPM

Age (years)	Frequency	Percent	Mean (years)	Sd	Range (years)
<30	34	36.2			
30-39	22	23.4	36.18	10.65	15-60
40-49	27	28.7			
>49	11	11.7			
Total	94	100			

Gender: Visitors were 49.5% male and 50.5% female, showing that there is no preference for visiting KPM Forest Reserve related to gender.

Education: The majority of respondents completed high school or secondary level of education (21.5%), college/diploma holder (29%), bachelor's degree/graduated (28%) and master's degree (19.3%). Only 1.1% had not completed primary school or had a lower level of education (Table 13). It shows that the respondents who visit the site (KPM) have high levels of education.

Table 13 Visitors level of education

Education level	Frequency	Percent
Primary level	1	1.1
Secondary level	20	21.5
Diploma/College level	27	29.0
Bachelor's degree	26	28.0
Master's degree	18	19.3
Ph.D.	1	1.1
Total	97	100

Occupation: Concerning the occupation, the respondents are professionals in different areas. For instance, 20.6% are in private company and 21.6% in government service. 25.8% are self-employed, 18.6% are student, 10.3% are housewife, and the rest are teachers and others (Table 14)

Table 14 Occupation of tourists

Occupation	Frequency	Percent
Private company	20	20.6
Government job	21	21.6
Self-employed	25	25.8
Student	18	18.6
Housewife	10	10.3
Others	3	3.1
Total	97	100

c) Pyschographic characteristics of tourists

Activities preferences and participation

Respondents were given a list of possible activities in KPM and asked to answer multiple choice questions about preferred activities. The top marked/ranked activities were wildlife (gaur) viewing, observing scenery/landscape, viewing mountain, relaxing in peaceful environment, forest walking, exploring the forests (biodiversity), hiking or trekking, and taking photographs, showing the visitors' high interest in nature (as shown in Table 15).

This kind of activity is highly dependent on the quality of the natural environment providing visitors a rewarding and enjoyable time (Kuo, 2002). As implied by Dwyer and Edwards (2000), it has relevance because people who enjoy an experience associated with the natural environment will be more willing to pay fees or to make donations which can be used to manage and protected that environment.

The results showed that the activities developed in the area by the visitors are similar in other recent surveys in natural places, particularly in KYNP, the neighboring ecotourism destination of KPM; because, one can see gaur easily in KPM, which is difficult to view in Khao Yai. This is (probably) why wildlife viewing is number one

ecotourism activities at KPM. The duration of visit in the area influence the kind of activities and vice-versa. Visitors, who stay in the area for a short period (day-use), spend the time relaxing (50%), walking on the area or walking on the trails (47%). Nevertheless, activities as wildlife watching tend to be more demanded by visitors who stay in the area for larger periods. Hence, the findings confirm that the management of visitor activities is equally important to the management of the resources (Kuo 2002).

Table 15 Activity preferences and participation of tourists at KPM

Preferred activities by tourists	Frequency	Percent
1. Wildlife (Gaur) viewing	95	95
2. Scenery/Landscape viewing	93	93
3. Mountain viewing	92	92
4. Relaxing in peaceful environment	50	50
5. Nature trail/Forest walking	47	47
6. Exploring forests and trees	39	39
7. Hiking/Mountain trekking (mostly foreigners)	26	26
8. Taking photograph	19	19
9. Visiting local farm/learning local culture	11	11

Visit motivations

Tourists are not always all the same. Every tourist is different and there are the factors they are motivated by. Thus, motivation has been fundamental to tourism researchers interested in the "why" of tourist travel (Fennell 2003). Examining the motivating factors, several factors emerged (Table 16). Visitors gave various reasons for choosing to visit at KPM. Visitors were asked about the motives for their visit to KPM and to indicate the degree of importance of some given motives, using a 5-point Likert-scale (1 = not important; 5 = most important). The three most important motives were: viewing wildlife, particularly some remaining gaurs, the most important wildlife in KPM; observing landscape or scenery; and learning/exploring forests i.e. biodiversity. Average values of responses are shown in Table 16.

Table 16 Tourist's visit motivations

Motives/reasons for visit	Average	Standard deviation (Sd)
1. Gaur (wildlife)	4.32	0.796
2. Scenery (landscape)	4.31	0.807
3. Trees and forests (biodiversity)	4.18	0.710
4. Mountain/hill	4.05	0.799
5. Relax in peaceful environment	3.73	0.813
6. Diversity of plants	3.63	0.812
7. Diversity of animals	3.60	0.842
8. Diversity of tourism activities	3.59	0.923
9. Community and culture	3.58	0.793
10. Adventure (hiking/trekking)	3.36	0.837

Besides, most of visitors exhibited a high level of interest in participating of environmental education and conservation program. Educational levels, income or age did not influence the interest of the visitors in participating of nature programs. The importance of education in general has been recognized by many authors and organizations concerned with encouraging sustainable practices. According to Chin et al. (2000) and Moscardo (1999) this interest of visitors can signals an opportunity for the use of education as potential management tool achieving sustainability.

Visitors valuation of problems met at KPM

Ecotourists' needs on infrastructure differ significantly from those of mass tourism (Saleh and Karwacki 1996). Nevertheless, there is growing community expectation of high quality facilities and interpretation at natural attractions (Dwyer and Edwards 2000). Therefore, within the scope of the research, visitors were asked to give their opinions on the improvements to the area. According to Chin et al. (2000), these parameters can be examined to identify possible indicators for monitoring the area.

Visitors were asked what kind of problems they encountered during their stay and how severe they judged the occurrence, using a 4-point Likert-scale (4 = Serious problem; 3 = Problem; 2 = Indifferent [it happened, but did not annoy] and 1 = No problem). As can be seen in Table 17 respondents considered problems related to lack of information; cleanliness/sanitary conditions, restroom and water services unavailability; and vandalism as problems. It is interesting that item like 'missing gastronomic services'; 'poor accesses and 'accommodations without comfort' did not annoy visitors too much.

Table 17 Visitors valuation of problems met at KPM

Problems related to physical environment features	Average	Sd
1. Inadequate information	2.77	0.866
2. Restrooms absent	2.49	0.848
3. Unavailability of water services	2.46	0.942
4. Unavailability of sanitary precarious/toilet facilities	2.38	1.374
5. Vandalism	2.17	1.055
6. Litter cans absent	2.10	0.785
7. Cleanliness of the tourism site	2.10	0.808
8. Overcrowded	1.78	0.875
9. Poor access	1.65	0.721
10. Missing gastronomic (food) services	1.54	0.656
11. Conflicts with other recreational activities	1.52	0.733
12. Environmental impacts	1.49	0,766

d) Behavioral characteristics: Visitors traveling patterns

Party composition: Most (78%) visitors at KPM travel in the company of 2-5 persons, 46% as a couple or with friends and 32% with relatives or colleagues. It is interesting that only 22% of the visitors visit the area alone.

Purpose of trip: The main purpose of the trip to KPM was tourism (holiday or leisure) in 70.7% of cases. Some visitors came for tourism and nature study (16.7%), and business and official trip (10%). The field observation noticed that the recreation is most intensive in weekends. High visitor flows can cause multiple negative effects on the ecosystems. Thus, fundamentally, the carrying capacity of the tourism in the research area should not be exceeded at the weekends.

Source of media for trip: A significant proportion (52.0%) of visitors said they learn/knew about the destination area of KPM simply by word-of-mouth from friends, family or relatives and 35.7% of the visitors learn about the area from travel guide book or from newspaper and 11.2% from television or radio. Other sources of knowledge were brochure of destination (1.1%).

e) Willingness to pay entrance fees

Most (80%) of the respondents knew that they were visiting a forest reserve, which is a protected area. Asked whether they agreed with charging entrance fees for protected areas, using a scale from 1 (strongly disagree) to 9 (strongly agree) the average response was 7.68 (with s = 1.71), indicating a high disposition to pay entrance fees. About 53.3% of respondents would like to pay up to 50 Baht, 21.3% would pay up to 100 Baht and 13.3% (mainly foreigners) would like to pay more than 150 Baht (Table 18). Many respondents added ‘if the money really would be applied for conservation of the protected area’, probably because they think that the money would not be used adequately. The reserve currently does not charge entrance fees.

Table 18 Willingness to pay entrance fees at KPM

Willingness to pay	Frequency	Percent
<20 Baht	7	9.3
20-50 Baht	40	53.3
51-100	16	21.3
101-150	2	2.7
>150 Baht	10	13.3
Total	73	100

f) Importance of protected area as tourist attraction

Using a 5-point Likert-scale (1 = not important to 5 = extremely important), tourists were asked how important the wilderness experience or protected area is for them. The average response was 4.24 (with s = 0.547). It is interesting that the respondents chose only the options ‘extremely important’ (30.0%) and ‘highly important’ (64.4%), which indicates that nature is one of the principal motives for a visit to KPM and that consequently conservation of nature is very important to visitors (Table 19).

Table 19 Importance of protected area as tourist attraction

Level of importance	Frequency	Percent	Mean	Sd
Extremely important	27	30.0		
Highly important	58	64.4	4.24	0.547
Moderately important	5	5.6		
Total	90	100		

8. Institutional Resources and Management Structure

Legal establishment

The RFD declared KPM as a "Reserved Forest" by the National Reserve Forest Act of 1964.

Conservation authorities: Key stakeholders

In late 2002 during the public sector reform, the mandate for managing protected areas in Thailand was changed from RFD to the DNWP. Accordingly, the key direct institutional stakeholders for management of the protected areas are:

1. The **DNWP** (or RFD) under MONRE manages the KPM's protected areas/forest reserve and is responsible for providing educational facilities, rehabilitationg degraded sites and preventing logging, hunting and fires.

2. The **Local Government Authorities** located within or immediately around protected areas. This includes the elected councils under the TAO (Tambon Administrative Organizations), which are mandated to undertake local environmental planning and management, as well as, developing local infrastructure and spatial planning. 5% of all national park revenue is transferred to the TAO via the Department of Local Administration (Ministry of Interior). This budget allocation is an example of direct protected area benefit to local stakeholders.

3. The **Local Communities** within and adjacent to protected areas who to a varying degree are dependent on resource use inside the protected areas and often have been there prior to the gazettement of the protected areas. Within communities the "Village Headman Structure" (Phu Yai Ban) plays a significant role in village-level decision-making, and links upward to the Sub-district (Tambon) and District Authorities. Some community members are furthermore organized into Community-Based Organizations (CBOs) or Cooperative Groups and constitute relatively influential stakeholders in and around the protected areas.

4. **Private Sector** stakeholders, who are potentially engaged in resource use in or surrounding the reserve. They ranged from unregistered to fully legalized tour operators in the reserve.

5. Wildlife Fund Thailand (WFT), a **Non-governmental Conservation Organization (NGO)** whose mission is the conservation i.e. degraded forest restoration and wildlife protection in collaboration with DNWP/RFD and local community participation.

The structure and capacity of DNWP (former RFD) as a forest management institution are described earlier in details in "literature reviews".

NGOs Role for Conservation through Reforestation Project

Wildlife Fund of Thailand (WFT), a Thai NGO founded in 1983 and now it an international affiliate, is a relatively small conservation organization that achieved prominence by attracting attention to some of Thailand's most important environmental issues. WFT has started its Rural Development Project for the Conservation of Natural Resources or so called TEAM (The Environmental Awareness and Development Mobilization) Project since 1987 in the area surrounding Khao Yai National Park (KYNP). The objective of the project is to decrease the violence of the problems encountering KYNP.

KPM, the northeastern edge or buffer zone of KYNP had once been well endowed by evergreen and dry evergreen forest with lots of wild animals, but have almost entirely vanished since the past 30 years. The forest was destroyed by illegal logging and poaching, as well as, commercial forestry has replaced native forest areas. Verdant green forest had been changed into a bare mountain covered with *Imperata grass*. Fire occurs every year during summer.

As a result, in 1994, the Wildlife Fund of Thailand started a reforestation program in Honor of His Majesty King Rama IX on the occasion of the 50^{th} Anniversary (Golden Jubilee) celebrations, covering a total forest area of 5,000 rai (8 km^2). The project was expedited with the assistance of the local people who lived in the area. Apart from village development programs, fires, grazing and poaching protection schemes were employed to accelerate the result of the project. Slowly KPM forest has come back to life. Gaur is an important wildlife come back to the area. Besides, more than 100 kinds of birds have been reported, including various kinds of other fauna such as, squirrels, hares, wild boars, wild pigs, civets and Asiatic black bear, apart from gaur. The area at present is an attractive destination for ecotourist.

Moreover, recently, the attitudes have begun to change, and the villagers themselves are collaborating with forest restoration programme by planting mixture of several species, capable of rapidly shading out weeds and attracting wildlife to restore the KPM's forests. The trees are provided by the RFD and are planted by local villagers. Wildlife Fund Thailand (WFT), the NGO, responsible for the area, provides expertise and training for the villagers, and has helped them to make an exhibition in the village to explain the project to the general public. There is even a nature trail along which guides from the village lead educational groups through the planted sites, as well as, some of the remaining patches of original forests. Since tree planting began and

illegal logging and hunting stopped, the forests and its wildlife are rapidly returning to the area. KPM now is filled with greenery of a new forest.

Community Participation in Ecotourism Development

1. Community's perception on impacts of ecotourism development

As many countries, particularly the developing and least developed countries have turned to tourism as the means to generate national income, employment and living standard, the diverse pressure from tourism and its associated development have begun to affect the local population. Likewise, ecotourism has its root in traveling to relatively undisturbed natural areas with the objective of studying, admiring, and enjoying the scenery, as well as, the existing cultural and historical sites. Every site, when a tourist sets foot, he/she causes negative impact. It is an unavoidable fact. It is, therefore, estimated that such trend may have a significant impact upon host community.

Given the fact that ecotourism can flourish in an area only with the support of the areas residents, it is necessary to understand local resident's opinion of the current situation in their community. This approach helps identify to what extent they are aware of the impacts that might occur within the community, in turn providing guidance to developers.

To this end, respondents were asked to rate their level of agreement or disagreement with a number of ecotourism impact statements. It comprises: economic impacts, social and cultural impacts, and environmental impacts, using a scale ranging from -2 (strongly disagree) to +2 (strongly agree). To study resident's perception on the impacts of ecotourism development, a set of 22 statements were used.

a) Community's perception on economic impacts of ecotourism

The economic impact items measure potential job opportunity, small-scale investment, standard of living issues, and income distribution effects. As Table 20 shows, about 77% of respondents thought that ecotourism would provide more jobs and employment. Likewise, about 73.85% felt that ecotourism would attract investment and promote a small-scale enterprise. Furthermore, most respondents (83.08%) indicated that the standard of living would increase. At the same time residents (66.92%) pointed out that ecotourism would contribute to state and local tax. More than 40% of respondents believed that ecotourism would likely increase the price of goods and services in the community. About 60.77% of respondents expected that ecotourism would benefit a small group, particularly the rich group.

However the overall responses produced an average score of 0.81 in the index of perception on the economic impacts, indicating that on an average, local residents are quite positive in terms of the perceived economic impacts.

Table 20 Local's perception on economic impacts of ecotourism development

	Statement	Perception on economic impact					Mean score[1]
		SA	A	N	D	SD	
1	ET will provide jobs and employment	49 (37.69%)	51 (39.23%)	21 (16.15%)	9 (6.92%)	-	1.15
2	Attract investment and promote SME	40 (30.77%)	56 (43.08%)	30 (23.08%)	4 (3.07%)	-	1.01
3	Standard of living will increase	43 (33.08%)	65 (50.0%)	15 (11.54%)	5 (3.85%)	2 (1.53%)	1.09
4	Price of goods and services will increase	15 (11.54%)	42 (32.31%)	47 (36.15%)	18 (13.85%)	8 (6.15%)	0.29
5	Benefit will get only the rich group	29 (22.31%)	50 (38.46%)	36 (27.69%)	12 (9.23%)	3 (2.31%)	0.69
6	ET will contribute to state and local tax base	24 (18.46%)	63 (48.46%)	24 (18.46%)	9 (6.92%)	10 (7.69%)	0.63
	Average index of perception on economic impacts[2]						0.81

Note:

[1] = the score represent mean response measured on a scale from -2 (strongly disagree) to +2 (strongly agree).

[2] = the index of perception on economic impacts is the mean of the average scores for each statement.

SA = Strongly Agree; A = Agree; N= Neither agree nor disagree (Neutral);
D= Disagree SD= Strongly Disagree

b) Local's perception on social and cultural impacts of ecotourism

The nine social and cultural impact items monitor whether ecotourism will provide cultural exchange opportunities, the increasing in awareness/recognition of the local culture and heritage, and disrupt various quality of life factors. The responses concerning the social impact items seem to be prone to ecotourism development. As seen in Table 21, about 56% of respondents stated that ecotourism would offer valuable cultural exchange with visitors all over the world, while more than 62% of the respondents imagined that ecotourism would change the tradition and culture, value system, social structure of the community, and life-style of local residents. In addition, leading to crowding and congestion, increasing the amount of crime, accident, prostitution and drug abuse, and creating competition with existing recreation opportunities are recognized as their concerns. More than half (56.15%) of the respondents conceived that ecotourism would help build-up awareness and recognition of local culture and heritage. Finally, about 26.35% of the respondents expected that there would be a conflict between immigrated outsider and local residents due to the competition on the investment.

The overall perception of the respondents is 0.15 which indicated that less positive, most of them did not have a strong agreement on the social and cultural impact aspects. This implies the community is not aware of positive social and cultural

impacts, in turn they were highly concerned on the negative social and cultural impacts of ecotourism.

Table 21 Perception on social and cultural impacts of ecotourism development

	Statement	Perception on social and cultural impact					Mean score[1]
		SA	A	N	D	SD	
1	Meeting tourists will be an experience and learning of other people and culture	25 (19.23%)	48 (36.92%)	38 (29.23%)	15 (11.54%)	4 (3.08%)	0.57
2	ET will conserve cultures (Individual behavior, family relations, beliefs, values etc)	33 (25.38%)	57 (43.85%)	25 (19.23%)	10 (7.69%)	5 (3.85%)	0.79
3	ET will not alter social structure (a rich-class and a lower-class)	20 (15.38%)	61 (46.92%)	31 (23.85%)	13 (10.00%)	5 (3.85%)	0.60
4	ET will preserve local life-styles (dressing, eating, and recreation activities)	24 (18.46%)	60 (46.15%)	28 (21.54%)	13 (10.00%)	5 (3.85%)	0.65
5	Ecotourism will lead to crowding and congestion	4 (3.08%)	27 (20.77%)	21 (16.15%)	41 (31.54%)	37 (28.46%)	-0.61
6	ET will increase the crime, accident, prostitution and drug abuse	6 (4.62%)	22 (16.92%)	15 (11.54%)	42 (32.31%)	45 (34.61%)	-0.75
7	ET will create competition with existing recreational opportunities (Forests etc.)	6 (4.62%)	20 (15.38%)	63 (48.46%)	31 (23.85%)	10 (7.69%)	-0.14
8	Ecotourism will build-up awareness/ recognition of the local culture and heritage	17 (13.07%)	56 (43.08%)	39 (30.00%)	15 (11.54%)	3 (2.31%)	0.53
9	Outsider immigration causes conflict with local residents	12 (9.30%)	22 (17.05%)	34 (26.36%)	41 (31.78%)	20 (15.50%)	-0.27
	Average index of perception on social and cultural impacts[2]						0.15

Note:

[1] = the score represent mean response measured on a scale from -2 (strongly disagree) to +2 (strongly agree).

[2] = the index of perception on social and cultural impacts is the mean of the average scores for each statement.

SA = Strongly Agree; A = Agree; N= Neither agree nor disagree (Neutral); D= Disagree SD= Strongly Disagree

c) Local's perception on environmental impacts of ecotourism

The seven environmental impact items assess how ecotourism will impact natural resources and environment conservation, basic infrastructure and facilities, the supply of recreation sites, and the unpleasant effects.

Table 22 Perception on environmental impacts of ecotourism development

	Statement	Perception on environmental impact					Mean score[1]
		SA	A	N	D	SD	
1	ET will provide incentives for restoration of resources	20 (15.38%)	63 (48.46%)	38 (29.23%)	8 (6.15%)	1 (0.007%)	0.71
2	Roads and public facilities will be at high standard	54 (41.54%)	64 (49.23%)	11 (8.46%)	1 (0.77%)	-	1.31
3	ET will result in over crowded trails, parks and other places	5 (3.87%)	31 (24.03%)	23 (17.83%)	42 (32.56%)	28 (21.70%)	-0.44
4	ET will greatly add to traffic congestion, noise, and pollution	8 (6.15%)	33 (25.38%)	21 (16.15%)	42 (32.56%)	26 (20.00%)	-0.34
5	Ecotourism will lead to more litter, solid waste, and sewage	7 (5.38%)	28 (21.54%)	29 (22.31%)	40 (30.77%)	26 (20.00%)	-0.38
6	Ecotourism will degrade water supply due to excessive uses	5 (3.87%)	28 (21.54%)	24 (18.46%)	46 (35.38%)	27 (20.77%)	-0.47
7	ET will degrade ecosystem due to infrastructure development	9 (6.92%)	29 (22.31%)	33 (25.38%)	35 (26.92%)	24 (18.46%)	-0.27
	Average index of perception on environmental impacts[2]						0.02

Note:

[1] = the score represent mean response measured on a scale from -2 (strongly disagree) to +2 (strongly agree).

[2] = the index of perception on environmental impacts is the mean of the average scores for each statement.

SA = Strongly Agree; A = Agree; N= Neither agree nor disagree (Neutral); D= Disagree SD= Strongly Disagree

Table 22 represents that majority (90.77%) of respondents thought that ecotourism would help maintain the quality of roads and other public facilities. Likewise, over 64% of the respondents expected ecotourism would provide an incentive for restoration of cultural and historical sites, natural resources and environment. In addition, respondents believed that the facilities currently exist would become increasingly overcrowded (27.9%). About 31.53% of the respondents stated that noise pollution would increase due to ecotourism. Moreover, about one-fourth of the respondents conceived that ecotourism will degrade water supply, lead to litter, solid waste and sewage.

The overall perception on the environmental impact is to be 0.02 which concluded that the respondent's commitment/agreement was not so strong on the environmental impact.

Ranking of perception index (0.32), shown in Table 23 represents the mean measures of impact items based on the Table 19 to 21. The impact items associated with economic aspect have the highest score. The second favored by the residents is social and cultural aspects. Environmental aspect is the least favorable impacts.

Table 23 Average overall index of perception

No.	Perceived impacts on ET development	Perception index	Rank
1	Economic impacts	0.81	1
2	Social and cultural impacts	0.15	2
3	Environmental impacts	0.02	3
	Average overall index of perception	0.32	

The common perceptions of the communities in the three villages under study were related to economic issue. It was observed that respondents perceived the economic impact of ecotourism development as vital. They felt that ecotourism development would improve the economy of their community.

Table 24 Advantages and disadvantages of ecotourism development

Statement	Perception on environmental impact					Mean score
	SA	A	N	D	SD	
The overall advantages of ET development outweigh the disadvantages	51 (39.53%)	56 (43.41%)	20 (15.50%)	1 (0.77%)	1 (0.77%)	1.20

To clarify the perceived benefits and costs of ecotourism development, respondents were asked to rate the agreement or disagreement on ecotourism development in their community whether its overall advantages outweigh the disadvantages.

The perceived overall advantages and disadvantages of ecotourism development were positive for a majority of the respondents of KPM community (Table 24). Almost 83% of the respondents felt that the overall advantages of ecotourism outweigh the disadvantages, while about 15.5% of the respondents possessed the neutral (neither agree nor disagree) about future ecotourism impacts.

2. Community's willingness to participate in ecotourism development

Local participation has become an important component in ecotourism development context. In many situations, a local organization is needed so that it acts as a channel through which local people can participate in the development and implementation of development programs. It has been now understood that people's participation is inevitable for sustainable development. While ecotourism development in this study is pacing into the implementation stage, it is essential to understand to what extent locals are willing to participate in implementation and monitoring stage of ecotourism development so that the implementers can improve their projects. This chapter describes the degree of the local residents' willingness to participation and the relationship between local's attributes and their willingness to participate in ecotourism development.

a) Community's willingness to participate in planning stage

Planning is organizing the future to achieve certain objectives (Inskeep, 1991). Most type of formal plan is done by government agencies except for corporate planning. The conflicts that arise in planning are relative of different community interests on general issues of deciding the most desirable future for an area. Ecotourism planning also requires a participatory approach which means involvement of local community in decision making process for planning and management. Local stakeholders comprise diverse groups with a broad range of interests to be taken into account. There are usually a variety of views about the forms of ecotourism in any particular area. Differences may need to be resolved and considered all values, opinions, and what role they can play in ecotourism development. It is widely believed that if the locals have the opportunity to voice their concerns and opinions and also to offer some solutions, they will be more likely to support an ecotourism.

Table 25 Community's involvement in the meeting of ecotourism planning

Meeting in ET planning	Village name			Total
	Khao Phang Ma	Poh Thong Pathana	Khlong Sai	
Yes	15	11	19	45 (34.88%)
No	45	8	31	84 (65.12%)
Total	60	19	50	129 (100%)

Table 25 shows simple frequency distribution that about 34.88% of the respondents have participated in the planning stage with WFT's Forest and Wildlife Restoration Project. Of those respondents who have not participated, 26.09% of the respondents stated that they would like to participate in planning, while 49.56% claimed that they would like to participate if they have free time and about 24.35 of them said "no" in this question (Table 26).

Table 26 Willingness to participate in Ecotourism Planning

Willingness to participate	Village name			Total
	Khao Phang Ma	Poh Thong Pathana	Khlong Sai	
Yes	17	3	10	30 (26.09%)
Yes, if time available	26	9	22	57 (49.56%)
No	14	3	11	28 (24.35%)
Total	57	15	43	115 (100%)

b) Community's willingness to participate in implementation stage

Ecotourism requires implementation structures and arrangements to conduct activities which the local residents play a key role in implementing activities, setting up institutional arrangements and enterprise operation (Edwards, 2004).

The consequences of participatory planning stage perception in common goal is crucial to achieve the implementation stage .Many community-based planning process

stop with awareness perception, decision-making, because this ends people' s responsibilities just when they could be of most value-when the how-to, where-to, when-to, how-will-do-it must be added to what people want and how it will look. People must stay involved, throughout the process, and take responsibility with the professional to see that there are results (Sanoff, 2000).

In case of KPM, there is a Reforestation project with promotion of natural resource conservation, and the projects related ecotourism development.

The following Table 27 presented the training programs of KPM's Reforestation Project that would directly support ecotourism. The respondents were asked if they were interested in this project or uninterested. It was found that a majority was willing to participate in all training programs. The program concerning skill development in making handicraft was found to be the most favorable program and then, the next favorable was to be the promotion and building up awareness in natural resources conservation.

Table 27 Willingness to participate in training programs and reforestation activities

	Statement of activities and training	Interested	uninterested	Total
1	Awareness in resource conservation	106 (82.17%)	23 (17.83%)	129 (100%)
2	Plant and animal resources and law enforcement in forest area	82 (64.06%)	46 (35.94%)	128 (100%)
3	Community organize activities concerning cleanliness and hygiene	96 (77.42%)	28 (22.58%)	124 (100%)
4	How to be a good server for restaurant and other tourism activities	92 (73.60%)	33 (26.40%)	125 (100%)
5	Skill development in handicraft	108 (85.04%)	19 (14.96%)	127 (100%)
6	Making souvenir from local product	98 (77.17%)	29 (22.83%)	127 (100%)
7	Making local food	91 (72.22%)	35 (27.78%)	126 (100%)
8	Involving local guide	65 (52.42%)	59 (47.58%)	124 (100%)
9	Natural/forest resource management	76 (61.79%)	47 (38.21%)	123 (100%)
10	Safety service for tourists	80 (66.11%)	41 (33.89%)	121 (100%)
11	Agricultural product improvement	92 (74.80%)	31 (25.20%)	123 (100%)
12	Agriculture industry development	82 (66.67%)	41 (33.33%)	123 (100%)
13	Promoting herbal plant for health	91 (72.80%)	34 (27.20%)	125 (100%)
14	Voluntary in resource management (plant and animal protection)	85 (67.46%)	41 (32.54%)	126 (100%)
15	Guideline for home-stay management	59 (47.58%)	65 (52.42%)	124 (100%)
16	Packaging of local goods	78 (64.46%)	43 (35.54%)	121 (100%)

c) Community's willingness to participate in Benefit-sharing

It is commonly accepted that ecotourism can generate income for the locale community. Moreover, Ecotourism should necessarily be a small-scale project designed to benefit local communities while being sustainable and sensitive to the environment. Strengthen community organization serves as a means to sustain the fairness of benefit sharing. The degree of willingness to participate in benefit sharing depends upon various factors which emphasize on the benefits gained. Not only economic benefits that local will attain, but also the social culture, and environmental benefits can be gained from the project either individually or collectively.

In this study, emphasis has been placed on the economic gained. According to information from the survey data, it shows nearly 90% of the respondents were interested in economic benefit. This may due to the economic benefit is the tangible immediate benefit which indicates their quality of living.

Table 28 Community's interest of economic benefit from ecotourism enterprises

ET enterprises	Village name			Total
	Khao Phang Ma	PoThong Pathana	Khlong Sai	
Local guide	14	2	22	38 (16.10%)
Nature guide	6	6	11	23 (9.75%)
Tour operator	-	1	3	4 (1.69%)
Handicrafts	17	7	21	45 (19.07%)
Home-stay	8	2	9	19 (8.05%)
Resort	3	-	2	5(2.12%)
Restaurant	27	8	17	52 (22.03%)
Local foods	24	5	20	49(20.76%)
Cultural show	1	-	-	1 (0.42%)
Total	100	31	105	236 (100%)

Nine kinds of ecotourism enterprises have raised here for the local residents made a decision to choose the favorable enterprise. The results shown in Table 28 based on responses; each respondent would like to operate more than one enterprise. This obviously expressed their interests in economic benefit. Restaurant enterprise possessed the high interest of local people residents and the next interests were to be local foods and products, the third and fourth interest belonged to handicraft and local guide enterprise respectively.

In addition to their interests, the respondents were asked to indicate the means of operating the enterprises. Table 29 demonstrates about 42.74% of the respondents preferred to run the enterprise individually. About 56.41% stated that they would like set a cooperative group with stocked fund to start the enterprises. This may believed that the participation in any activities, collective problem solving, and sharing the experiences can help them to effectively reach the common goal, as well as, to help resolve conflicts among group members.

Table 29 How to participate in benefit- sharing

How to participate in sharing-benefit	Village name			Total
	Khao Phang Ma	Po Thong Pathana	Klong Sai	
Individual	29	5	16	50 (42.74%)
Cooperative	27	12	27	66 (56.41%)
Others	1	-	-	1 (0.85%)
Total	57	17	43	117 (100%)

d) Community's willingness to participate in monitoring and evaluation

Participatory monitoring enables local community to track progress, provide and generate timely information for decision making to improve efficient and effectiveness, help to identify problems before they happen, adapt to changing

circumstances, and provide information for evaluation. Participatory evaluation involves local in making retrospective assessment of performance and achievements at a particular point (Edwards, 2004).

Therefore, monitoring and evaluation is a tool to indicate the success of the project if the outputs meet the objectives. Using participatory approach to monitoring and evaluation is essential in ecotourism development.

Table 30 shows that about 40% of the respondents would like to participate in monitoring and evaluation if they have available time, while about 41.54% stated that they would like to participate irrespective to the time. Lastly, 18.46% pointed that they would not participate.

Table 30 Community's Willingness to participants in monitoring and evaluation

Willingness to participate in M&E	Village name			Total
	KPM	Poh Thong Pathana	Klong Sai	
Yes	26	8	20	54 (41.54%)
Yes, if time available	23	9	20	52 (40.00%)
No	11	3	10	24 (18.46%)
Total	60	20	50	130 (100%)

Table 31 How to participate in monitoring and evaluation (M&E)

Participation in M&E	Village name			Total
	Khao Phang Ma	Poh Thong Pathana	Khlong Sai	
NGO/WFT	9	3	4	16 (12.60%)
Government	16	1	13	30 (23.62%)
Community	23	11	29	63 (49.61%)
Volunteer group and other	12	4	2	18 (14.17%)
Total	60	19	48	127 (100%)

The nature of participation in monitoring and evaluation of ecotourism project was studied from the respondent's responses to how monitoring and evaluation should be done (who will conduct). As seen in Table 31, almost half (49.61%) of the respondents conceived that the community themselves should play the role, while 23.62% argued that the government should take this responsibility. Over 14% reported that the volunteer from the community and about 12.6% stated that the WFT, the NGO responsible for the project should be great of this task.

3. Community's need for ecotourism development

Local people's expectations of ecotourism development are essential sources of information for planners. Based on assumption that people have specific ideas about developing themselves and their community, an attempt is made to understand the reason why they need ecotourism in their community.

For this purpose, the respondents were asked whether they need ecotourism in their community and why. All of the respondents stated that they need ecotourism in their community and the reasons for supporting ecotourism were shown in Table 32 which is categorized into 3 groups. Out of the sampled respondent's, most of those who favoured ecotourism (54.31%) cited ecotourism's importance in improving economic condition, while over one-third (33.62%) indicated that they want to maintain host culture and way of life (tradition); and finally, to conserve their forest, wildlife and other natural resources (12.07%).

Table 32 Reasons for supporting ecotourism development by community

Reasons for ET development	Village name			Total
	KPM	Poh Thong Pathana	Khlong Sai	
Improve community's income	26	11	26	63 (54.31%)
Conserve natural resources	8	2	4	14 (12.07%)
Maintain culture and way of life	18	4	17	39 (33.62%)
Total	52	17	47	116 (100%)

In sum, the results were found that all respondents who have never involved in the meeting of the planning stage showed the high level of willingness. A majority of respondents were interested in the training program proposed or initiated by the WFT, the NGO responsible for the area or government sectors, particularly the program of making handicrafts and souvenirs, promotion of the cleanliness and sanitation in the community and awareness building in natural resource conservation were the most favourable program in the implementation stage.

Sharing benefits are the key component to encourage local participation. In Khao Phang Ma community, almost all of the respondents were willing to participate in ecotourism enterprises for generating additional income, as well as, main income.

In monitoring and evaluation stage, it is found that a majority would like to participate, especially they have available time and most of them indicated that community itself should take response to monitor and evaluate the ecotourism project.

An additional and final study was to explore whether locals need ecotourism in their community. The result was shown that the respondents needed ecotourism in their community for benefiting the community economically, getting incentive for the protection of their natural resources (forest, ecosystem and environment), as well as, for maintaining host cultures and traditions.

Integrating Community's/Local's Viewpoint into Ecotourism Development

As ecotourism is a new term for KPM community, the villagers have become doubt in its meaning and principles. Discussion with the villagers to get more details is essential to inquire what they perceive regarding ecotourism development. The

following summarization from focus group discussion reflects the views of the villagers.

1. Locals Perception on Ecotourism Development: Village Ban Khao Phang Ma

KPM community comprising all 3 villages are closely associated with the Reforestation Project of Wildlife Fund Thailand (WFT). A majority is engaged with forest management and wildlife protection activities and traditional farming. The issues were raised and the responses show that some of the respondents have not heard about ecotourism, while majority heard about it but did not understand its objectives, principles and concepts. They were considerably concerned about outsider or capitalist would bring the investment in their community as seen in the adjoining Khao Yai. Someone said: "previously we can walk through everywhere in the village if we want but now the capitalist bought the land connected with the KPM's reserve forests. We can not pass this place". This may due to their misunderstanding or lack of awareness on the negative and positive impacts which pushed them to sell the land.

Regarding activities of ecotourism, they were interested in but they were lacked of inspiration and the marketing was weak. As a result, the local products did not increase their income. "Another factor that causes the outputs did not meet our objective is lack of government assistance that facilitates us throughout the project" – member of the KPM village said. "WFT - an NGO has provided the training on agroforestry and horticulture improvement. Initially we formed a group and produced local fruits and vegetables as a local product. Later we had no marketing; therefore, we have stopped operating" – one of the woman complained. This is one example which the agencies concerned had promoted capacity building but lack of monitoring and evaluation.

Problem concerns are garbage disposal. "No one takes response for it. We have to burn our garbage near the house" one of the villagers complained. Besides, one of them pointed out that in dry season, water is inadequate. "Regarding any activities if the leader is weak, people's participation is also failed" – one of the local-guides said. They also gave a suggestion on the government aspect, should provide sufficient budget for resource protection and work more close with local people as an assistant in every process.

2. Locals Perception on Ecotourism Development: Ban Poh Thong Pathana

Ban Poh Thong Pathana is another village that started some activities, such as nature trail or local guide and handicraft in their community. Some of the villagers attended the meeting and when dialogue about ecotourism started, the village headman said "ecotourism in our community can benefit us and to improve quality of life". Now a day's local organization is still functioning, for instance, women group, handicraft group" – the headman added. Other income generation programs were supported by WFT and most of villagers were interested in and participated in those activities. Moreover, village headman added that recently the WFT provided the training program on nature/forest trail guide; forest and wildlife protection and now we have 9-10 local

guides, though these are insufficient. They gave their opinion on what make ecotourism project successful. “I think our village have readiness for this development” – village headman pointed out. Finally they were asked whether they need ecotourism and what should it be in the near future. Most of them stated that they wanted a good road and quality of other facilities improved in terms of gradually changed and they confirmed that they natural and cultural resources would be maintained as can presently be seen the tranquillity in their community.

3. Locals Perception on Ecotourism Development: Village Ban Khlong Sai

Like Ban KPM and Ban Poh Thong Pathana, the primary farming practices were agriculture or mixed orchard and tourism activities were local guide, nature trail guide and trekking. In this village, it is noticed that local organizations are actively functioning. Compared to other villages, more organizations were established here. One of the experienced villagers, Mr. Puu Chai Chom (60), stated that most of villagers in this village are highly willing to participate in any activities. “We have women group, youth group, home-stay group, forests and wildlife protection group etc. Most of villagers have understood about ecotourism and they aware of positive impacts that can benefit them especially income generation improvement – village headman pointed out.

The most problem concern is garbage disposal. “Even now we do not have waste treatment system, if more tourists that means more garbage” – one of respondents said. We need help from agency concerned in operating of ecotourism enterprise like home-stay, local guide, and so on – one of respondents suggested.

Ecotourism Development at KPM

Elements of Sustainable Tourism at Khao Phang Ma

Ecotourism as an integral part of sustainable tourism in KPM consists of four major elements: provider, experience, setting and tourists (Figure 13).

Provider: Local people of KPM and the staff of WFT, local NGO responsible for the areas natural resource conservation through reforestation project, are the local provider in KPM’s ecotourism activities. Local provider generally benefits host communities more than outside providers by reducing economic leakages. Lindberg et al. (1996) clarified that local providers tend to provide greater expansion of the local economic base.

Experience: With respect to the experience, ecotourism normally involves: travel to natural areas (such as mountain trekking, forest or nature trail walking, camping and agroforestry activities), and low impact on the destination sites. Ecotourism experiences also contribute to the better understanding and appreciation to the culture and natural history of the area visited.

Setting: The setting for ecotourism includes natural environment (e.g. forest, mountain, wildlife etc.); host community (e.g. culture, customs, local foods,

handicrafts, daily activities etc.); agricultural scenery (sloping land agriculture, corn field, vegetables, horticulture etc.) and the facilities involved in the activities.

Tourists: Both domestic and international tourists are the most important element in the ecotourism development. The core of ecotourism activities is how to make satisfy of tourists to visit the area.

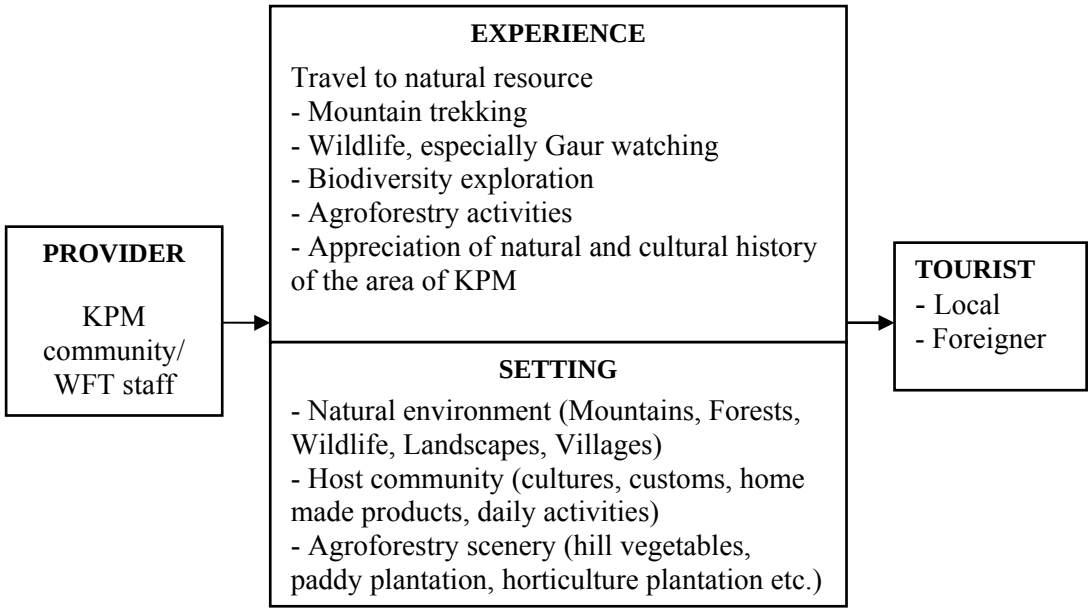

Figure 13 Elements of sustainable tourism at Khao Phang Ma

Both experience and setting are called tourism products. Tourism products can either be a tangible or an intangible asset. In most cases, the tourism product, also known as a tourism experience is a combination of both tangible and intangible items. In other words, the tourism product is a combination of all the various components or assets that provide the tourists with the total travel experience and satisfaction (Kuo 2002). Murphy (1994) adopted a destination perspective of the tourism product: "resources and created facilities of a destination combine to produce an amalgam of activities and functions called a tourism product". Importantly, he refers to "resources" which would include: the natural and cultural environment of the destination, and place (location) and host community.

Tourism in Khao Phang Ma actually has a "total tourism product" consisting of: (1) destination attractions included the natural environment, hiking/ walking trails, wildlife viewing spots, agroforestry activities and hill community/villages; (2) destination facilities included visitor-cum-training center, local guide or nature trail guide, local foods and restaurants, home-stays etc.; (3) accessibility of the destination, such as public transportation; (4) image of the destination as a local cultures and traditions (way of life); because the areas environment or resources, such as 'forest restoration project' is managed by the local communities, Government organizations and NGOs in collaboration and cooperation. Therefore, the impacts on local people are

in harmony with the ecotourism development. The fact is that local people who managed and serviced to ecotourism is strongly related to the community forestry project; and (5) price to the consumer. However, all tourism products in KPM have not been maximized yet.

Tourism System in Khao Phaeng Ma

'System' in the Webster Dictionary is defined as a set of connected items or devices which operate together. In line with this definition, tourism system can be defined as a set of components composed in such a way formed as one unit and work dependently with one another. Tourism system in KPM involves people, promotion and information, transportation, attraction and services (see Figure 14).

Promotion and information: Promotion is the coordination of all seller initiated efforts to set up channels of information and persuasion to sell goods and services or promote an idea. Promotion, backed by targeted information, is the most powerful of the commercial sector tools for communicating messages in leisure tourism. As a host, local communities in KPM do not have good planning regarding promotion. The promotion has been set by concerned management authority or local government at the same time with promotion for tourism in Khao Yai National Park, since KPM is a buffer zone and nearby ecotourism destination of Khao Yai. Apart from the government/local authority, the agency responsible for tourism promotion (TAT) and other tourist agencies also promoted KPM as a co-managed forests but unique place for adventure tourism (such as hiking/trekking in mountain); also for exploring the gaur. KPM is undoubtedly the best site in Thailand to see the Gaur, a species of wild cattle, and an important wildlife in the world.

Transportation facilities: For many people, part of the experience of tourism is the excitement of planning a vacation trip and enjoying the actual travel experience. This means, it is not the destination of the trip alone that provides satisfaction. There seems to be a public transportation and tourist's bus as family and friends gather to see someone who is traveling.

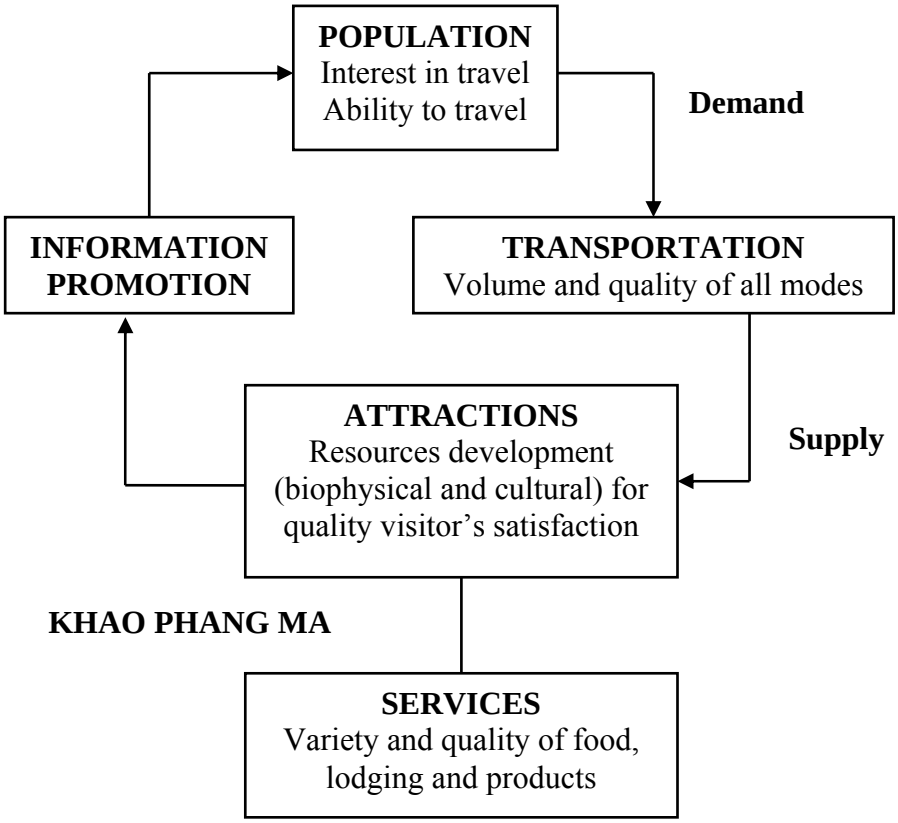

Figure 14 Khao Phang Ma in the tourism system

Attractions (mentality of travelers): Sometimes it is difficult to distinguish between activities and attractions (Morgan and Lok, 2000, Kelly and Nankervis, 2001). The main activities are often the main attraction for visiting the area. Importantly, Swarbrooke (2002) recognizes that it is due to attractions to be a resource that provides the raw material on which the activity depends.

The range and mix of activities available at a destination represents one of the most critical aspects of destination appeal, and provide the primary foundation of both the physical and emotional stimulation that excites and challenges the visitor (Ritchie and Grouce 2003). People do not travel vast distances and spend time and money to go some where that does not offer them something that is different from home. There is a complex inter-relationship between people's desire to travel and what attracts them to a specific destination.

Attractions are arguably the most important component in the tourism system. They are the main motivators for tourist trips and are the core of the tourism product. Without attractions there would be no need for other tourism services. Indeed, tourism as such would not exist if it were not for attraction (Swarbrooke, 2002). Moreover, Swarbrooke categorized attractions as natural and created. Natural environmental assets are usually the most successful in attracting tourists, but they must attract them in a way

that allows the assets to be preserved. Tourism can be destroyed if those assets are exploited. Natural attractions can be sub-divided into climate, scenery and wildlife.

KPM, the land which is combination of mountains, forests, indigenous techniques, unique cultures – motivate tourists from over the worlds to visit this area; consequently, this particular area receives a considerable amount of tourists. Because there is no control over the entrance to this area, the exact number of visitors is impossible to determine.

The main attractions in KPM are its unique environment. The range of activities available at KPM is as diverse as the wildlife and the scenery (mountainous landscape) they contain. As there is unique and high diversity of ecotourism destinations – such as, trees and forests, mountains, grazing meadows (grass lands), salt-licks, valleys, geological (topographic) landform, open spaces, view point (wildlife observation spot), village/community cultural and religious sites, therefore, KPM can offer an array of ecotourism attractions including:

1. Wildlife (particularly some remaining gaurs): Gaurs (*Bos gaurus*) are the most important wildlife species at KPM. Gaurs are threatened animal species in the world, hence, it is the most important (globally significant) wildlife species at KPM. Few sites in Thailand can rival KPM for its opportunity to view - the gaur. Therefore, wildlife viewing will by far be the most popular activity at KPM in near future. Gaur watchers may amongst be the first groups of ecotourists shall visit KPM and bring ecotourism to the area of KPM.

2. Landscapes and scenery: A number of mountains/hills (with outstanding physical features and climate.) of touristic interest could be found at KPM.

3. Relax: Opportunities to relax by nature (trees and forests) to follow short forest nature trails is a popular activity at KPM.

4. Forests (biodiversity): Despite damage caused by loggers and fires, KPM still retains visible populations of many plant and animal species. Forests and their wildlife are the main ecological attractions at KPM. Nature trail or forest walking may offer good chance to appreciate variety of forest habitats in several ways.

5. Trails/Hikes: Nature trails or hikes are also another good choice at KPM. More adventurous visitors can try trekking or mountain climbing at KPM. For those who willing to carry a tent and supplies on their backs (back-packers), there are some short distance hikes.

6. Photography: KPM may be a good place for photographers, slide shows and other interested parties.

7. Birds: The area of KPM is the strong holds of several rare and endangered bird species. More than 100 kinds of birds have been recorded at KPM (TAT, 2002).

8. Butterflies and insect appreciation (without harming them): may be other viable ecotourism activities/attractions for special interest tourists.

9. Visiting local culture and communities: Beside natural attractions, cultural activities (cultural tourism) can also be promoted. Tourists are being attracted to visit KPM because of the local culture and way of life. This culture with delicious local food, unique language and colorful dresses make the location in the remote area become beautiful, although there are much nice natural scenery to see such as mountains, forests, community forestry, agroforestry, homestead forests, horticulture, and agricultural conservation. Many tourists, whom the researcher met, said that they also want to see the local people with the unique way of life. They like to take picture standing beside local people and their houses.

Furthermore, the mountainous area of KPM is on the way to earn its distinction as part of the Khao Yai National Park (a heritage to the world as has very recently been declared by the UNESCO). The increasing popularity of these attractions will contribute to the continued prominence and growth of tourism in the region.

Agricultural Practices in the Context of Sustainable Tourism Development

Traditional agricultural practice in the hill is one of the tourism products in KPM. Agricultural activities can not be separated from daily activities of local community in this area, since it becomes the main occupation aside from tourism. The following will describe overview of hill land or sloping land agriculture and the current situation with their problems, constraints and strategies for developing highland agriculture.

An overview of Highland agriculture

Type of farming which is practiced by hill people such as slash-and-burn, bush or forest fallow and swidden or shifting cultivation are now commonly designated in scientific literature as “swidden cultivation” (swidden: a cleared and burned field) (Chapman 1978). Hill people who support themselves through swidden cultivation are widely thought by many to be responsible for the destruction of valuable timber reserves, which are of major economic interest to the nation.

A study of hill-tribe land utilization was conducted by the Tribal Research Center (TRI, 1995) over 8 provinces namely: Chiang Mai, Chiang Rai, Lampang, Lampun, Mae Hong Son, Nan, Uthaithani and Kanchanaburi. It found that there are three types of swidden cultivations: permanent, rotating and abandoning.

Swidden cultivation: Swidden or shifting or slash-and-burn cultivation, in general is regarded by some as a menace to the environment, a harmful practice that causes widespread deforestation and erosion. Others view shifting cultivation as the benign and productive use of poor soils by those who live under poor socio-economic conditions.

Slash-and-burn agriculture remains a dominant land-use system in many parts of the tropics. Depending on the perspective of the observer, the criteria used and system applied, slash-and-burn farmers have been either commended for having a harmonious relationship with their environment (Warner 1991); or criticized for destroying the forest resources (Mackie 1985). Although systems used vary greatly, most slash-and-burn farmers depend on perennials to suppress weeds and recover soil fertility in the fallow period to provide fruits, substitutes for vegetables, emergency staple food and hunting ground.

The increasing rural populations who have no secure access to land, many people have become shifting cultivators. These landless people do not practice a form of shifting cultivation based on cultural heritage, nor do they have any local community or legal system that provides them with the ability to use sustainable (perpetually productive and ecologically sound) agricultural practices. As a result, their shifting cultivation activities are detrimental to forestlands.

Current Condition of Agriculture at Khao Phaeng Ma

There are two ways that local people of KPM are doing cultivation. First, they plant in the plain area; and second, they plant in the slope area.

Shifting cultivation to permanent cultivation – Shifting cultivation is still done in some areas of this area, especially for the ones who are practicing agriculture in the slope land area, as their ancestor did for ages. After 2-3 years of shifting cultivation, these areas are often degraded into grasslands. A cropping phase that is too long and a fallow period that is too short result in rapidly declining crop yields, loss of soil nutrients, and soil erosion. Greater population pressure has also stimulated spontaneous migrant cultivators who convert primary forest land to land on which destructive forms of shifting cultivation is practiced. Considerable deforestation occurred because of the movement of shifting cultivators into areas opened up by illegal logging. However, “the people of KPM have moved from shifting cultivation to more permanent cultivation”.

Livestock – After crop production, livestock is the most important component of highland farming system as a supplementary economic activity. Besides, being an integral and essential component, it is the interface with the environment, meeting the social, religious and nutritional needs of the farmers. It also provides employment and cash income to the farmers. The animals that are commonly raised by the local people of KPM are cattle, buffalo, pig and poultry. The management of most animals is traditional and feeding is largely by grazing and scavenging.

Some issues of local people and their agricultural practices - A related common fear is that crucial watershed capabilities might be destroyed by agricultural practices in the hills. Without sufficient forest cover, rainfall would tend to run-off rapidly rather than being absorbed and released gradually over subsequent months. The result would be flooding and erosion during the rainy season and drought in the dry season.

Uncontrolled highland agriculture development can cause severe environmental degradation. The major crops grown on the hills are cassava, corn, maize, and vegetables. Maize and vegetables are grown on steep land under rain fed conditions. The yield reductions were attributed to the effects of soil erosion. As crop productivity declines, farmers are forced to open new land for cultivation of food crops. This increase in cultivated area was accompanied by the destruction of valuable forest resources.

A number of factors have contributed to these environmental problems. First, the government institutions responsible for providing support services (e.g. research, extension etc.) are generally weak. Second, government policies do not spell out clearly the priority and strategy for developing the hilly and mountainous areas. Finally, population pressure and widespread poverty have offset what progress has been made in alleviating environmental problems in the remote hill and mountain areas.

Problems, Constraints and Strategies of Highland Agricultural Development

There is no denying the fact that farming in the hills is quite different and more complex and difficult than in the plains. For this reason, an opinion survey relating to the main problems and constraints of agricultural development faced by the farmers at KPM was conducted.

As expected, it has been visualized that farming in the hills has many built-in problems and constraints. Nevertheless, most of them can be tackled immediately with sort-term solutions, and some of them can be overcome over a period of time depending upon the availability of the financial assistance. The following problems and constraints were identified:

1. Soil erosion and water run-off due to the steep hill terrain, torrential rains and destruction of vegetation, depletion of soil fertility etc. is the alarming problem of the hill farmers. To check this problems an integrated management approach is needed. Otherwise, in future, the hill areas may be converted into deserts which will ultimately lead to drastic environmental imbalance.

2. The farmers in the hills have small, fragmented and scattered holdings which are economically non-viable units. Due to low land base, the farmers have meager resources. However, capital is pre-requisite for modernizing agriculture. Joint or cooperative farming can be tried out to solve this problem.

3. Non availability of certified seeds of high yielding varieties of major crops is the burning problem of farmers in the hill areas.

4. Technological constraints: hill farmers being small farmers, have capital scarcity and risk avoidance objectives. Since they are not agreeable to making drastic changes in their farming system, a few opportunities that offer potential to increase productivity of farm level enterprises need to be identified.

5. Water is the limiting factor in crop production at KPM. Due to uneven topography and steep slopes, the surplus rain water is lost in surface run-off. There is therefore, a great need for conservation of water resources. The smallest point of run-off water should be conserved.

Although the local government bans shifting cultivation practiced by local people at KPM, some of them are still doing this cultivation without considering forest conservation. Some strategies that have been taken by the local government for developing the area are: reforestation and conservation. Reforestation in the hills and mountains has been given top priority by the government. Large area has been replanted with various species, in line with the government policy to conserve forest resources. Apart from that, the government has emphasized development of strong agricultural extension and education, research and rural community development efforts and provided various incentives including low-interest loans and adequate supplies of farm inputs.

Agriculture Supporting Ecotourism Development at Khao Phang Ma

A large number of highland farmers, especially those who are dependent on subsistence cropping, are increasingly looking for off-farm labor opportunities to make ends meet. Off-farm labor increases the risk of social and cultural disintegration of highland communities, but is often the only way to survive. It may also be a way to collect some cash to invest in new cropping alternatives. If the 'cultural erosion' associated with off-farm labor is not too bad and if the people's working conditions are humane, the phenomenon can be regarded as a positive evolution stabilizing the highland farming systems.

KPM communities consider that agriculture is this village's number one economic driver, while tourism is the villages' number two economic engine. Both of these income sources would not guarantee as a sustainable source for their family, its just more likely temporary. The local people still have problem with land ownership since they operated in the land belonging to the area. Local government has to look at the relationships among the components of farming systems and relate it to tourism development in the village. Current situation at KPM is that the heart of ecotourism development is still just concentrated in viewing natural scenery, wildlife/gaur watching and hill/mountain trekking, while other components only as complement.

Based on the above potentials, it is recommended that tourism development could be completed by mobilizing all components of natural resources including agricultural systems as a tourism product. Tourists would look into how their life in traditional way.

The strategy for tackling environment degradation depends on government policies with respect to hill/steep land agriculture. To support sustainable tourism development, there are some choices: to develop mountain agriculture on the basis of integrated rural development concept involving community forestry, agro-forestry, horticulture, hill irrigation development, applied research to increase productivity of

hill crops, soil, and water conservation, and reforestation, while at the same time, carrying out family planning program to reduce population pressure. If population density in the region can be kept at a low level, in equilibrium with the natural resources in the mountains and the hills, the soil degradation and deforestation problems can at least be minimized to allow for sustainable agriculture.

Agroforestry requires knowledge of agriculture and forestry, expanded and recombined to give a fresh integrative look at all components of farming and land use. Agroforestry or in more general term, integrated land use is a possible alternative to KPM, where hilly agriculture relies for its ecological strength on sequential growth of crops and trees, agroforestry relies upon spatial organization. There are many potential productivity benefits; crops and produce are more likely to meet the subsistence needs of the farmers.

Linkages among components of farming system and ecotourism

Figure 15 describes the linkages between tourism and components of farming system. It is generally accepted that mixed or integrated farming systems are the most stable ones. This mixing refers to crop species, crop types (annual and perennial, subsistence and commercial) and also to broad types of living organisms which are raised to the farmers' benefit: plants and animals.

The components of the farming system at KPM identified as crops, livestock, forests and pasture, and the market. Any biomass of plant origin produced on the farmland is considered to be the contribution of crops. Thus, crops production encompasses the production of vegetable, fruits, fodder, and fuel-wood on the farmland.

Crops and livestock- There exists a complementary relationship between crops and livestock on the farming systems in KPM. Bringing livestock into the system creates a range of opportunities to diversify and stabilize the system linking production chains, recycling or improving nutrient and energy flows. Crops provide feed and sometimes bedding material to livestock, and in return, receive manure from livestock. Livestock feed, supplied by crops, mostly consisting of roughages such as crop by-products (straw), grass and tree fodder from farmlands.

Crops and forestry- Forests directly influence crop production by supplying compost materials and indirectly by supporting animals which provide the manure. In addition, forests, which are usually located on upper slopes, provide protection to crop lands against landslides and soil erosion. Forests are the principal source of fallen dry leaf, litter and lopped, green foliage of trees and herbaceous species which are used for animal bedding and composting. Forest biomass, when mixed with animal excreta, yield organic compost manure which forms the principal source of soil materials for hill agricultural land.

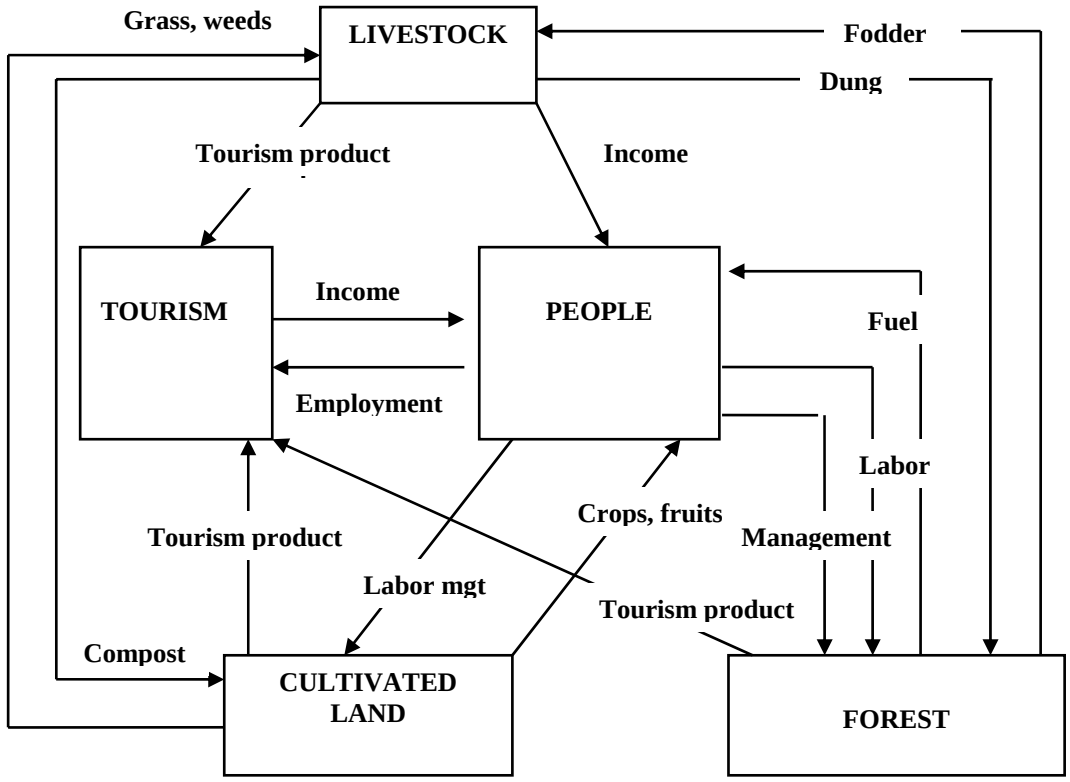

Figure 15 Tourism Centered Farming System at Khao Phang Ma

Livestock and forestry/pasture- In general, forests and pastures are more closely linked with livestock than any other component of the mountain farming systems. In the hills and mountains, the number of livestock kept per household in the hills and mountains is mainly determined by the available forest and grazing lands in the area. Forests and pastures provide feed and bedding materials to livestock and, in return, receive manure from grazing livestock.

People and environment- The friendship between people of KPM and their environment can be expressed from their proverbs (according to a village headman, Pipat Kampirat, 2006):

1. The forest lives, man lives; no more forest, no man can live
2. The rotational field belongs to the women; the rice field belongs to the men.
3. You get things to eat from water so you have to preserve water; you get things to eat from the forest, so you have to preserve the forest

With the development of agro-ecosystem and a holistic view of agricultural systems as part of the greater "natural ecosystems'', there has been a re-conceptualization of shifting cultivation. The agro-ecosystem approach attempts to integrate the multiplicity of factors affecting cropping systems, then, they would be the priority product of tourism.

Impacts of tourism at Khao Phaeng Ma

Tourism development in KPM created positive and negative impacts on the socio-economic and natural environment of the area.

Positive impacts

1) Conservation of natural areas: Tourism helped justify and pay for conservation of important natural areas and development of forest reserves. Without tourism the area might have been developed for other uses or allowed to ecologically deteriorate with a consequent loss of environmental resources. Tourism also helped protecting the watershed areas.

2) Increased income: In addition, tourism generated the incentive of economic activities in and outside the reserve. As more visitors come, more benefit is generated from the tourists.

3) Improvement of environmental quality: Tourism helped pay for the maintenance and redevelopment of some of the areas in the reserve.

4) Enhancement of the environment: Although a more subjective benefit, development of KPM through reforestation project has enhanced attractive tourist facilities and landscape in the neighborhood area that were otherwise dull and un-interesting in some areas.

5) Improvement of infrastructure: Social and economic benefit in terms of local infrastructure such as roads, and electricity have improved through the development of tourism in KPM. Better condition of roads has increased the accessibility of the neighborhood residents.

6) Increased environmental awareness: Realizing the importance of the reserve, villagers are more interested and concerned about the natural environment and its conservation. With the help of NGOs (WFT) several projects have been taken up to encourage local awareness since 1994, when the reforestation project gets started in this area.

Negative impacts

1) Ecological disruption – As far as recreation and tourism is concerned, protected natural areas are especially popular for trekking, hiking, camping, wildlife-viewing, and sight-seeing. The intentional and unintentional acts of tourists disturb fragile ecosystems. Roads, parking ground, and few other tourist facilities have been built in the reserve, is degrading the reserve's forest land and other natural resources. Under this group, the main undesirable tourism impacts are the following:

1.1) Branch/tree cutting – Certain trees are allowed to be cut by poor locals and guided trekkers for use as fuel to make campfires. However, this has lead to

ecological problems from unsustainable branch/tree cutting. A forest is the largest ecosystem on the land. It protects not only natural resources, such as, soil, water, and wildlife; but also, the environment and its waste assimilative function. As a fragile ecosystem, certain conditions or ecological environment for regeneration are required. Once a vicious cycle takes place, it is extremely difficult to restore it.

1.2) Destruction of animal habitat – The ill-considered practice of subsistence farming has damaged/degraded areas such as forest lands creating problems for gaurs and other wildlife to survive. Ironically, KPM is the only known area in Thailand where gaurs inhabit. It is considered as a key site for gaur preservation. As one of the protected ecosystems in Thailand, KPM offers the best chance for long-term survival of gaur in the country.

2) Water demand – Tourists and tourism facilities create high demand for additional water. Even though WFT has provided shallow wells for this purpose, there is also a problem of water shortage in dry season.

3) Air pollution – Ecotourism is generally considered as "clean or green industry"; but air pollution from tourism development has occurred from the use of internal combustion vehicles, such as, cars, buses and motor cycles used by tourists in particular areas, especially, in the project headquarter, where the car parking is located, view points and some attraction areas that are accessible by road.

4) Increase of noise and crowd - 'Noise and crowd' occurs especially during the holidays when 'too many visitors' come. Too many peoples stay in the campground create noise, which disturbs the animals, specially the nocturnal animals. Ecology and social carrying capacity is hard to quantify. However, a mere glance often suffices to determine that an area is 'too crowded'.

5) Waste disposal or littering - According to the staff of WFT and local's opinion, littering of debris on the landscape is the main problem in KPM. Waste or garbage on KPM is generated from communities and local enterprises settled in the area, as well as, the large number of people using the area and the kind of activities such as picnicking, camping, and hiking. Improper disposal of solid waste has generated environmental problems for both human and animal from vermin, disease, and pollution, as well as, being unattractive or creating visual/scenic pollution. There is no agency responsible for garbage collection and disposal. The individual households and enterprises should have to dispose of wastes themselves by burning it in the open area or bury it.

6) Land-use problems - Tourism development in KPM contributed to land use problems:

6.1) Unsustainable facility development: There is no sound land-use planning and principles for the development of vacation homes and resorts in the area. As the development of the tourist facility took place, problems of infrastructure, sewage disposal system, and insufficient water supply i.e. water demand also arised.

6.2) Less agricultural land – The boom of tourist facilities changed the use of land that mostly is more valuable for agriculture. This trend has lead to land-use problems such as increased price of land, thus increasing land speculation, less agricultural land, and hence, increasing number of landless farmers.

6.3) Deforestation – The slope land/slash-and-burn agriculture, as well as, development of tourism facilities outside of KPM have already encroached the forests which caused deforestation of "National Reserve Forests".

6.4) Change of land ownership – Tourism facility development increased urban and foreign control of land resources. Due to the change of land ownership and foreign investment of the tourism-related establishments, for example, restaurants and resorts; Thereby making an easy access to acquire land resource to the urban people or even foreigners.

7) Modification of the landscape – Modification of the landscape by developing facilities inside, and more importantly outside of KPM can bring both positive and negative impacts. The negative impacts happen when the development of the facilities often obstructs the natural view of the area, thereby, decreasing its aesthetic or scenic value.

8) Leakage of economy/Consumerism – The economy in many villages adjacent to KPM is still undeveloped and undiversified to offer necessary luxurious goods and services for tourism. To import these luxurious goods and services leads to leakage of tourist revenues and even increased consumerism of local people for imported goods.

Part – II: Problem and Potential Analysis

Why plan for ecotourism? For whom is the plan? Is there any problem to be solved and how to solve the problem? The main justification of ecotourism development planning in KPM is to ensure that it will help solving the problems which exist in the park, thus minimizing negative impacts from tourism while maximizing and creating more positive impacts by utilizing the potentials at KPM. As mentioned before, ecotourism will be successful industry only if the natural resource on which it is based is conserved. The forest reserve will be best protected if there is a management strategy where all the involved interest groups, especially, resource management staff, visitors and local communities take an active part.

Problem Analysis

For whom is it a problem? Three main interest groups have been identified in this planning step, namely KPM management staff, tourist, and local people/villagers. These 3 main groups are sometimes widely differing in their interests; encroachment of forest might benefit one interest group while being detrimental to another. Therefore any problem analysis will rely on the different viewpoints of the differing interest groups with respect of the ecotourism principles.

Problems at KPM have been identified from different approaches based on 3 main interest groups. Firstly, present problems faced by KPM's Forest management staff (RFD/WFT staff) were analyzed from the interviews with officers of concerned NGO/WFT, government agencies, local's, and analysis of secondary information, as well as, from the review of the Reforestation Project Management Plan (WFT undated).

The next identification of community's problem was analyzed from the survey/interview on the needs of the local people and local's viewpoint/opinion about forest and environmental protection through ecotourism development (as discussed earlier), and also from the report of NGO/WFT on KPM community.

Analysis of problems related to tourist was taken from analysis of tourists characteristics surveyed in KPM and from the negative impacts of previous discussion. These problems are discussed below.

1. Problems of RFD and Reforestation Project (WFT) staffs

The basic problem of RFD and the reforestation project (WFT) staff is the threat to the reserve's resource. The second is limited budget, staff and autonomy to carry out most important activities such as, to improve the environmental protection, to provide better facilities and services for tourist, and to assist the local people in improving their positive relationship to natural resource/forest management and conservation awareness. Another problem related to administration is the low coordination with other agencies, especially the RFD.

From the very beginning of project management, the main problems threatening the natural resources were wildlife poaching and forest encroachment due to low income of villagers. Though wildlife poaching has reduced recently, poaching for other forest products such as timber for construction, fuelwood, bamboo shoot, and medicinal plants continues.

Problems related to tourist for NGO/WFT staff is mainly because of the low environmental awareness of visitors especially concerning garbage, air pollution, high water demand, roaming through forest, and disturbance to wildlife.

2. Problems of tourist

Tourist in KPM faces the problems of limited information especially for foreigners, inadequate facilities especially, rest rooms, cleanliness, water, view point, side walk and traffic sign. Many visitor complaints that the environmental interpretation programme are very poor. Other problems are overcrowding in popular sites.

3. Problems of local people

Villagers within the low income group living adjacent to the reserve pay a major cost of protection of the reserve since they are not allowed to use the reserve's resources. This caused the main problem of low participation of local people in forest conservation (i.e. reforestation) programmes due to the small benefit. However, some efforts have already been done by WFT to improve people's participation.

One effort to reduce illegal use and promote protection of the Reserve by nearby villagers is the wilderness trekking programme development at KPM. Villagers act as porters and guides for trekking programme. People are aware that environmental degradation of the forest reserve will reduce its attractivity towards trekkers.

Another effort is provided by the village-based NGO/WFT, which provides technical training, promotes village development and supports conservation measures. Villagers, who join the training, agree not to poach park resources and in return are given access to low-interest loans, training and discounted merchandise in a store set up by the project.

These programmes gave good results as villagers receive income and have become more aware of the reserve's value. Unfortunately the progress of the programme has slowed down due to financial difficulty and problems of finding qualified local/nature trail guide.

Problem Analysis Matrix

Following the sequence of problem analysis, problems mentioned above is present in cause-effect-relationship matrix in Table 33. This matrix shows that

problems can also be seen from the perspective of their relationship to one another. “The row and columns contain the same items in the same order”.

Within a row, all “problematic effects” of a problem will be marked. Consequently, a column contains a “mark for all causes” which contributes to a problem. For instance, item no.1 extinction of rare animals and plants is caused by item no.2, illegal poaching; item no.3, deforestation; item no.4, encroachment of forest; item no.29, disease to wild animals; item no.13, landscape deterioration; item no.15, soil pollution and item no.30, low awareness of visitors. While item no.1, extinction of rare animals and plants has no problematic effect on any other problem.

The sum of a row indicates the relative importance of a problem causing issue, whereas the sum of a column indicates the relative importance of an issue which is caused by other problems. The results shows that the most important problems causing issue are shortage of financial resources and low awareness of visitors, while landscape deterioration and endangered animals and plants are problems which are the most affected or affected by biggest number of problems.

Table 33 Problem analysis matrix (The row and columns contain the same items in the same order.)

Problems with effects	Problems with causes																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	sum
1. Rare plant/animal extinction																															-
2. Illegal poaching	x																														1
3. Deforestation	x			x		x																									3
4. Encroachment of forest	x					x																									2
5. Invasion of wildlife on farm		x																											x		2
6. Poor facility maintenance								x	x						x																3
7. Inadequate viewing facility																								x							1
8. Inadequate restrooms/toilets							x																								1
9. Limited activity for tourist													x	x	x				x					x							5
10. Shortage of water							x																						x		2
11. Lack of information										x			x	x										x						x	5
12. Air pollution					x																										1
13. Landscape deterioration	x					x																									2
14. Solid waste					x								x		x																3
15. Soil pollution	x				x																										2
16. Lack of side-walk or path										x				x																	2
17. Shortage of traffic signs												x																			1
18. Lack of local participation		x	x	x																						x					4
29. Shortage of finance/fund							x	x	x	x							x	x	x		x		x						x		10
20. Shortage of qualified staff		x		x								x										x			x				x		6
21. Low coordination							x							x											x		x				4
22. Limited autonomy																				x	x										2
23. Overcrowd in certain spots								x	x	x			x	x	x																6
24. Conflict of forest boundary			x	x										x												x					4
25. Low local's participation		x	x	x																					x						4
26. Lack of private investment																				x									x		2
27. Limited number of shops																			x												1
28. Low income of local's		x	x	x																											3
29. Disease of wildlife	x																														1
30. Low awareness of visitors	x						x				x		x	x	x	x															7
Sum	7	5	4	6	3	3	5	3	3	4	1	2	4	8	4	2	1	1	3	2	2	1	1	3	3	2	1	2	3	1	90

Potential Analysis

The next step towards the formulation and solution of problems is analysis of the potentials. All potentials for ecotourism which exist and can be developed in KPM are identified and classified into basic and derived potential. These potentials were identified during field survey, as well as, from local's opinion.

Basic potentials were identified from natural potential, human potential in KPM. Derived potentials are the potentials which can be developed from the combination of basic potentials. Some of the potentials which exist in KPM are already utilized and some of them are not utilized.

1. Basic Potential

a) Natural Potential

As it was defined in the concept of ecotourism, natural potential is a precondition for developing ecotourism. KPM Reserve Forest i.e. Reforestation Project is a valuable resource for plants and animals. Due to its unique location in the buffer zone of KY National Park, its ecology, habitat and landscape, KPM is rich in aesthetically scenic (landscape), as well as, wildlife diversity and considered to be the only Gaur conservation area in Thailand. This makes the reserve as a major conservation area for maintenance of biological diversity.

The abundant green plant also creates clean air due to high oxygen productivity. KPM is an important source of water since 7 streams have their headwaters in this reserve and 24 villages in Wang Nam Khiao and Pak Thong Chai district of Nakhon Ratchasima Province dependent on its water for their nourish.

b) Human potential

Under this potential, the main resources are: (1) the existing tourists, (2) staffs/personnel of DNWP/RFD, (3) the staff of WFT (local NGO) and (4) the local people.

c) Institutional potential

Government policy is one of the institutional potentials since it gives the emphasis on the need to develop tourism and conservation of tourism resources. The other potentials are existing NGOs, existing rural industries and cooperatives of local community.

d) Existing Infrastructure

To develop ecotourism some necessary facilities already exist in KPM. These are: visitor-cum training center, trails/path, road network, wildlife watching spot, parking ground, campground, and open space.

2. Derived Potential

Derived potential is the further analytical process of ecotourism potential. Derived potentials were analyzed based on the ecotourism activities to improve tourist satisfaction, natural conservation efforts, possibilities to increase local people's benefit, and environmental education to improve visitors awareness, which can be developed in KPM based on the existing basic potentials.

The most popular activities for ecotourist which can be developed or improved in KPM are wildlife watching, sight/mountain viewing, forest walking, hiking, nature photography, botanical study/research, and camping. The other potentials are reforestation program, improved trading and services, forest product processing, rural industry marketing, bottom up planning and revenue generation.

Potential Analysis Matrix

For the purpose of potential analysis, a potential analysis matrix was prepared as shown in Table 34. The row contains the basic potentials and the column contains the derived potentials. A column shows a mark for all basic potentials which are combined to a derived potential, while within a row all derived potentials of a basic potential is marked.

From the Table 34, item no.10 the various variety of animals in KPM reserve forests as a basic potential contributes to derived potentials item D, environmental education; item E, natural Resource Education; item J, Research/ Study; item K, Guided Tour; item L, Wildlife watching; item M, Trekking; item N, Hiking item and R, nature photography. Whereas, item L ,Bird/wildlife watching, is the combination of basic potentials item no.7, Clean air; item no.9, Existing forest; itemno.10, birds/animals; item no.12,Natural landscape; item no. 17 tourist's; item no.21, Viewing/watching point ; item no.22, Road network and item no.23, Path. The matrix shows 43 potentials of ecotourism development in KPM which consists of 25 basic potentials and 18 derived potentials.

Table 34 Potential analysis matrix

Basic potential	Derived potential																	
	Budget allocation	Revenue generation	Bottom-up planning	Environmental education	Nat. Res. conservation	Reforestation	Rural industry marketing	Training	Trading and services	Research/studies	Guided tour	Wildlife watching	Trekking	Hiking	Camping	Picnicking	Forest product processing	Nature photography
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1. G. policy	x	x	x	x	x	x												
2. RFD staff	x	x	x	x	x	x	x	x	x	x	x		x				x	
3. Forest administration	x	x	x					x	x	x	x		x		x		x	
4. NGO	x	x	x	x	x	x	x	x	x	x			x				x	
5. Local people			x	x	x	x	x	x	x	x	x		x				x	
6. Rural industries				x			x	x	x								x	
7. Clean air				x	x	x				x	x	x	x	x	x	x		
8. Water source				x	x	x				x				x		x		
9. Existing forests				x	x	x				x	x	x	x	x	x	x		x
10. Animals				x	x					x	x	x	x	x				x
11. Land				x	x	x				x			x	x	x	x		
12. Natural landscape				x	x					x	x	x	x	x	x			x
13. Rainfall						x				x								
14. Fertile soil					x	x				x								
15. Ecosystem diversity				x	x	x				x			x					
16. Open spaces				x											x	x		
17. Tourist's	x	x		x	x		x	x	x	x	x	x	x	x	x	x		x
18. Campground		x											x	x	x	x		
19. Parking ground		x							x		x		x	x	x	x		
20. Toilets								x	x		x		x	x	x	x		
21. Viewpoint				x								x	x			x		x
22. Road		x		x			x	x	x		x	x	x	x	x	x		x
23. Paths				x								x	x	x		x	x	x
24. Visitor center				x				x							x			
25. Local organizations								x	x								x	

Multi-stakeholder Interest Analysis

The interest analysis is a planning instrument to make relating or conflicting interests transparent and manageable. By making the potential relations and conflicts transparent, the planning and implementation task will be made easier.

An interest analysis was performed to show the problems, needs and potentials from different interest groups in KPM. Different interest groups and their interests were identified from field surveys, interviews and secondary information. These are RFD staff/personnel, local people, tourists, NGO, investor, and rural industries. These interest groups play or will play important roles for ecotourism development in the project area of KPM. All the problems, needs and potentials for each interest group are presented in Table 35.

Table 35 Multi-stakeholder interest analysis

Interest groups	Problems	Needs	Potentials
Management staff	- Shortage of fund - Shortage of qualified staff - Low coordination between agencies - weak capability to implement forestry policies	- Protection of forests flora and fauna - More autonomy and financial support - Local's participation - Close cooperation with private sectors - More qualified staff	- Forest flora and fauna - Existing facilities -Bufferzone of KYNP - Close to Bangkok - Management staff
Local communities	- Low income opportunities - Landless farmer - Lack of land title - Low household income - Limited opportunity for off-farm activities - Conflict of agriculture and forest boundary - Consumerism - Low health condition - Lack of water - Bad road condition	- More support from local govt. and FD staff - Information about rules and regulations - Collection of forest products - Improved ability to provide goods and services essential to attract tourists - Local's involvement in the planning and decision-making process - Training in off-farm activities - Land to cultivate - Clear boundary of forests - Effective enforcement of laws about hunting and deforestation	- Labor force - Indigenous knowledge and techniques of resource conservation
Tourists	- Lack of information - Shortage of food and lodging facilities - Noise in some spots	- More opportunity to view flora fauna and landscape - Better facilities and services - Guided tour - Reasonable price for services and facilities	- Revenue generation - Knowledge - Information dissemination
NGO	- Lack of fund - Lack of cooperation with RFD - Lack of professional guide	- Strong cooperation with RFD - Peoples participation	- Exist in the area - Fund and technology source
Investor	- Lack of coordination with local government and RFD - Low investment information	- RFD & LG support - More information about investment - Clear policy for investment	- Financially strong and can contribute in local socio-economic development - Bring new ideas, competitive environment for better services in the area
Rural industries	- Lack of market and promotion - Lack of capital - Lack of training and extension services - Low incentives	- Provision of marketing - More capital - More extension service - More incentives	- Some skilled entrepreneurs - Job creation

Ecotourism Development Objectives and Programmes to be Implemented

1. Objectives Formulation

In order to solve the problems of ecotourism development at Khao Phang Ma, 30 objective were identified. An objective cluster (alternative programs) in Figure 16 was prepared to identify possible combination of certain objectives. The objectives were formulated from the problem matrix. The technique used is simply stating the problems in the positive way. Objectives are the specific results desired in planning for ecotourism development.

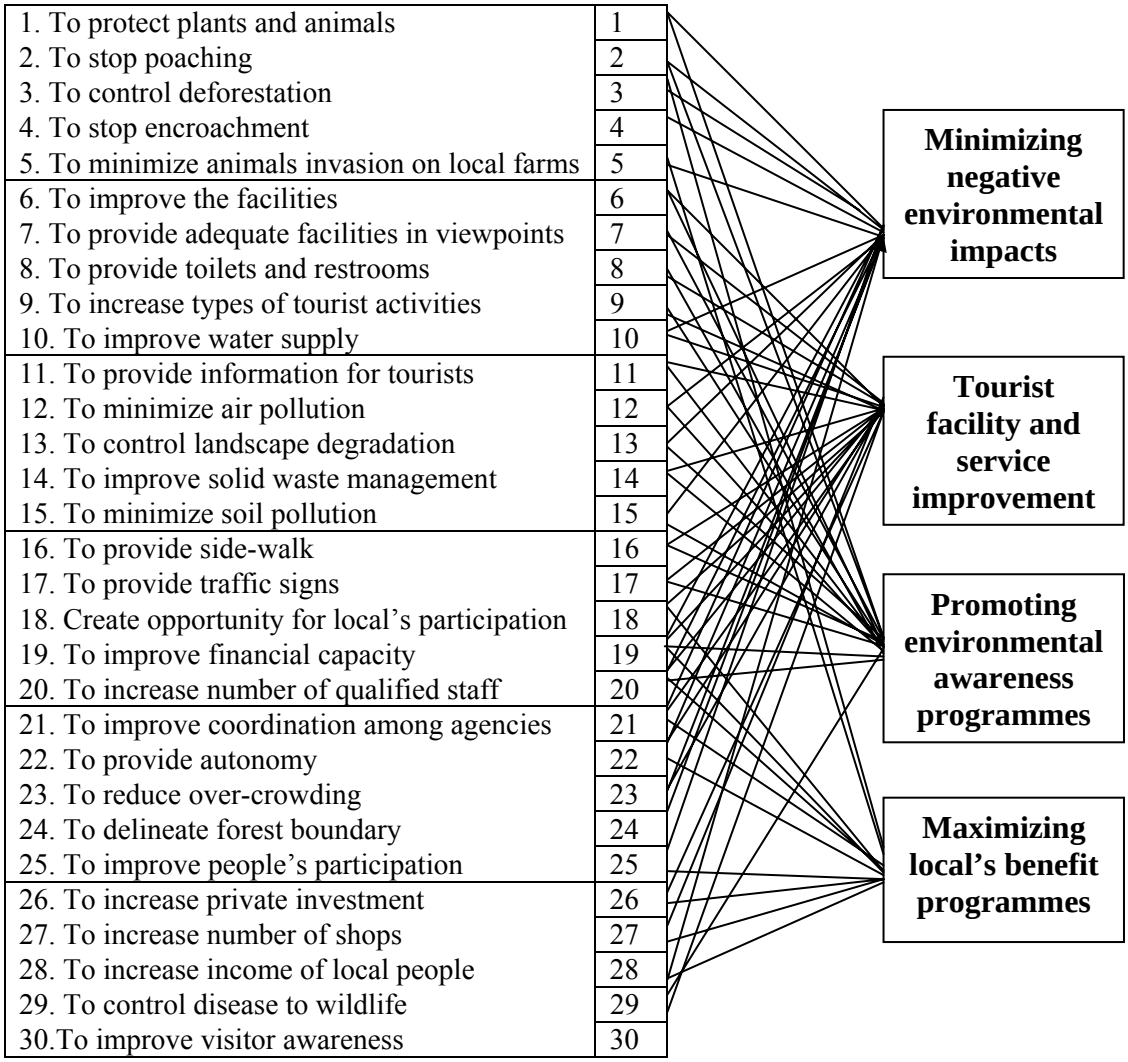

Figure 16 Objectives cluster

2. Programmes Formulation

2.1 Programmes

To develop ecotourism in KPM, the objectives of previous analysis were formulated into 4 alternative programmes. These alternative programmes are:

a) Minimizing negative environmental programme;
b) Tourist facility and service improvement programme;
c) Promoting environmental awareness programme; and
d) Maximizing local people's benefit programme.

2.2 Criteria selection

These four alternative development programmes are undertaken in order to prioritize the each alternative so that limited budget can be utilized more effectively. The high priority should be given to programmes that contribute most towards solving the crucial problems. The following steps are undertaken to prioritize the programmes:

Identification and selection of criteria against that the programmes have to be evaluated. The criteria are selected based on sustainable tourism principles (Refer to previous section in literature review). Other considerations are human and economic aspects of the park management. These criteria are,

a) Natural resource conservation

The programmes should act as a force for natural conservation and prevent damage to natural resources, should reduce over-consumption and waste, and should maintain the natural diversity.

b) Local community's involvement

The programmes should encourage local people involvement, should promote active partnership in tourism development, and should support local income generation and small scale industry improvement.

c) Economic benefit generation

The programmes should generate income for the reforestation project and people, should have high attraction to encourage private investors, donors and involvement of NGO, and should be considered low cost or high benefit-cost ratio.

2.3 Programme Ranking Matrix

A table showing all the previous analysis of criteria is presented in Table 36.

Table 36 Programme ranking matrix

Criteria	**Programme**			
	Minimizing negative environmental impacts	Tourist facility and services improvement	Promoting environmental awareness	Maximizing local's benefit
1. Nature conservation **Weight: 5** High = 3 Medium = 2 Low = 1	High (15)	Low (5)	Medium (10)	Low (5)
2. Local's involvement **Weight: 4** High = 3 Medium = 2 Low = 1	Medium (8)	Low (4)	Low (4)	High (12)
3. Benefit generation **Weight: 4** High = 3 Medium = 2 Low = 1	Medium (8)	High (12)	Medium (8)	High (12)
Total rank	31 **(1)**	21 **(4)**	22 **(3)**	29 **(2)**

- Assigning of weights to selected criteria so as to establish their importance from one another. Natural resource conservation is considered to be the most important criteria; the weight given is (5). The second and third is local community involvement and benefit generation, with weighted score (4) for each.

- Ranking the programmes on a suitable scale on the basis of degree of fulfillment of each of the criteria. To measure the fulfillment of each criterion, three qualitative and quantitative measurements are used, namely, High (3), Medium (2) and Low (1).

- Multiplying the respective rank values with the weights to find the scores and add up all the scores for each programme to find the total scores.

- Arranging the programmes in descending order of the total scores obtained.

The final score shows the priority as the following:

1. Minimizing negative environmental impact;
2. Maximizing local people's benefit;
3. Promoting environmental awareness; and
4. Tourist facilities and service improvement.

Overall Constraints, Success and Goals for Ecotourism Development at KPM

Summary statement is prepared based on the problem and potential analytical work carried out so far. It indicates the most important goals of ecotourism development planning, and identifies the essential principles to be applied for future programmes and projects.

1. Development Problems and Issues:

a) Natural resource degradation;
b) Low tourist's satisfaction;
c) Low environmental awareness of visitors;
d) Weak coordination of project management with other agencies;
e) Low local people's involvement.

2. Development Constraints

a) Centralized project/forest management structure;
b) Natural condition of the project/forest reserve.

3. Development Needs and Requirements

a) Environmental conservation;
b) Improvement of facilities and services for visitor;
c) Rational budget allocation;
d) Decentralization;
e) Reforestation;
f) Local people's participation;
g) Increased number of qualified staff;
h) Increased environmental awareness of visitors; and
i) Landscape restoration.

4. Development Potentials

a) Reserve Forests;
b) Human resources;
c) Infrastructure (existing facilities);
d) Existing NGO (WFT); and
e) Locational advantage of the reserves

5. Development principles

a) Using resources sustainably;
b) Reducing over-consumption and waste;
c) Maintaining diversity;
d) Supporting local economies;
e) Involving local communities;
f) Improving management quality; and
g) Educating visitors and locals.

6. Development Goals

The overall goal of ecotourism development is to achieve sustainable tourism, ecotourism development which in turn sustains the forest reserve/ reforestation project.

a) Economic Development

Increase income generating activities for project and people, improve services for tourist, increase opportunity for local people to participate, provide opportunity for private investment, and to increase type of activities for tourist involving local people.

b) Social-physical Development

Improve the quality of existing facilities and increase the quantity of necessary facilities, provide training for project staff and local people.

c) Environmental Conservation and Management

Conservation and protection of natural and human resources, minimize and control pollution, and improve visitor's awareness.

d) Institutional development

Encourage local people's participation, improvement of project coordination with other agencies.

Proposals to be implemented for the Development Programmes

Development programme is prepared in order to give a clear understanding and to identify the most applicable approaches or proposals to be implemented in the respective fields. The special development programme is the next step of planning after identifying the overall goals and objectives.

The overall goal for ecotourism development is to achieve sustainable tourism development at KPM. The next step is the specific purposes in order to achieve the overall goal. These purposes are:

1. To maintain plant and animal diversity in the forest;
2. To increase the income of local people; and
3. To improve visitor's satisfaction.

In order to achieve these purposes, several programmes have been identified provided with certain assumptions. These programmes are priority programme from the alternative analysis, on the one hand, and the expected results of development programmes, on the other. They are the means to achieve the purposes, namely:

1. Minimizing negative environmental impacts;
2. Maximizing local people's benefit;
3. Promoting environmental awareness of visitors and locals; and
4. Improving tourist facilities and services.

Various projects have been identified in order to achieve these programmes. These programmes can only be achieved if specific activities are implemented for each programme. The projects identified for each programme is described below:

The projects under "minimizing negative environmental impacts" are:

- Provision of specific guidelines for visitors,
- Effective enforcement of rules and regulations,
- Rehabilitation of deforested and critical forest land,
- Solid waste management,
- Defining the forest boundary more clearly,
- Restoration of landscape,
- Raising tree plantation along the road to Wang Nam Khiao, and
- Inspection of impacts regularly.

In order to "maximize the benefit of local people", the following projects are proposed:

- Provision of local nature guide training,
- Improvement of local transport linkage,
- Improvement of linkages to agriculture,
- Promotion of local handicrafts and other souvenirs,

- Promotion of lodging located in the villages,
- Promotion of proper sanitation, and
- Skill development training.

To promote “environmental awareness of visitors”, the suggested projects are:

- Provision of environmental learning center,
- Encouragement of resource-user associations (hiking, trekking), and
- Setting price for entrance and use fees,
- Setting visitor management program (restriction for visitors), and
- Provision of new hiking routes.

To improve “tourist facilities and services” at KPM:

- Construction of restrooms and additional toilets,
- Provision of facilities in trails and viewing spots,
- Improvement of water services,
- Improvement of paths and side-walk,
- Improvement of regulatory/traffic signs, and
- Promotion of new activities is the proposed projects to be implemented.

Part – III: Lessons Learnt from Khao Phaeng Ma

From this study at KPM the researcher has learnt the following four lessons. These lessons will be used in Thailand as well as in Bangladesh in two ways. They will serve as part of a proposal for the projects to be implemented through active participation of local residents in ecotourism development. In addition, they will serve as a tool for government and nongovernmental entities, private sector businesses, and communities in identifying specific needs of local communities for overall development.

Community-Based Ecotourism Development

1. Community ecotourism enterprises need separate designation within tourism laws and regulations allowing them to legally manage tourism. All types of community businesses must be recognized under this designation, including cooperatives, community organizations, community businesses, and associations, among others.

2. A special category needs to be created for native guides when licensing guides at the site level. As part of the licensing process, the special knowledge of local ecosystems and cultures that local peoples possess must be accounted for and recognized.

3. Tourism zoning at the PA site level must clearly define areas that are of special value for ecotourism by using a participatory process that includes local governments, local communities, private businesses and NGOs. Extractive activities, such as hunting, logging etc. should not be permitted in areas designated as ecotourism zones.

4. The role of NGOs in the development of ecotourism and communities requires careful study and should be given legal recognition as an important element in the development of sustainable community development as associated with ecotourism.

5. The private sector, NGOs, and other institutions and communities seeking to develop an ecotourism enterprise in a community area must sign an agreement with the relevant communities. Such an agreement must include at a minimum the use of a native guide.

6. The need for training and guidelines for community-based guides is a paramount objective. The training process should be developed as an exchange between the knowledge of community residents and outside authorities who are specialists in the sciences.

7. Economic incentives for communities to undertake a variety of activities in addition to ecotourism will become increasingly important in the long term in order to avoid dependence on the tourism market.

8. Soft loans and other forms of long-term credit are needed by communities to help them establish their own tourism programs.

Implementation of Reforestation Projects for Solving the Problems and Conflicts

KPM, the northeastern edge or buffer zone of KYNP had once been well endowed by evergreen and dry evergreen forest with lots of wild animals, but have almost entirely vanished since the past 30 years. The forest was destroyed by illegal logging and poaching, as well as, commercial forestry has replaced native forest areas. Verdant green forest had been changed into a bare mountain covered with *Imperata grass* land.

Local people called KPM "Mountain of Fire", because of widespread forest fires in every dry season. Although it has the legal status as reserve forest and has been guarded by officials from Regional Forestry Office in Nakhon Ratchasima Province, KPM apart from the above mentioned problems had also been facing the problems of encroachment, selling and buying lands, and slashing and burning of forests as mentioned earlier. This situation had been continuous and very severe since KPM is the area connected to but is outside KY National Park.

Later on, in 1994, the Thai government announced the Permanent Reforestation Project in honor of His Majesty the King's 50^{th} Anniversary (Golden Jubilee). The aim of the project was to increase 5 (five) million rai of forest area in Thailand from degenerate watershed forest area all over the country, with the active participation of the local people.

Involvement of Wildlife Fund of Thailand (NGO) for Reforestation Project

Wildlife Fund Thailand (WFT), a non-government conservation organization (NGO), who had already been running the so-called TEAM (The Environment Awareness and Development Mobilization) Project in this area since 1987, thus, joined the Reforestation Project at KPM, covering a total forest area of 5000 rai (8 km^2) on the land area called "Forest Plantation Target, FPT-52".

The very first task that the staff of WFT had to do was fire protection. Since KPM is surrounded by the agricultural areas of the local people, it was impossible to reforest without the understanding cooperation from the local people. Good communication with them was a must to build collaborative network along with the conservation.

Prior to 1994, WFT had implemented a rural development-conservation project in surrounding villages: Ban Khlong Sai, Ban Poh Thong Pathana, Ban Klong Durian, Ban Ee Paew and Ban KPM. Due to poverty, the project first attempted to solve debt problems by supporting a village revolving fund and introducing agroforestry (including fruit tree and bamboo production to replace mono-cropping of cassava, maize and corn) as well as community forests. Supporting these processes built up rapport and trust between the villagers and project workers. The denuded

forest reserve totaled 11,250 rai (1 ha. = 6.25 rai). Most denuded areas had been claimed and used by local influential people. It took some time to negotiate and resolve land use conflict with this group, as some parts of this denuded forest had been used for a long time. Therefore, only 5,000 rai out of 11,250 rai could be used for the forest restoration.

Supplementary planting was the chosen method of planting. Clearing by slash and burn was not implemented. The choice/selection of species for planting in the area includes native plant species and food species for wildlife such as *Ficus, Eugenea, Flacourtia, Muntingia, Sandoricum, Parkia, and Baccaurea.*

1. Fire protection is the most important factor in forest restoration on this *Imperata* grassland. Therefore, the project strongly created an "anti-wild fire crews", fire detection and fire education schemes/campaigns in the surrounding villages. Protection measures were easier to negotiate because some rapport had already been built between the project manager and the villagers. The community agreed to inform the project manager prior to burning farmlands to reduce the threat of fire in the reforestation/restored areas.

2. Cattle grazing are another factor, which promotes *Imperata* grassland. Farmers burn the grassland to produce new shoots and for fodder. Negotiations were made with cattle grazers to find alternatives, such as assigning designated grazing areas, alternative fodder types etc.

3. Hunters, another interest group, like to start fires to flush out game, and so have been frequently included in the project activities, with some being employed by the project.

The fire was finally attained. Siam weed was seen growing increasingly every year. Siam weed was a pioneer plant of this new redeveloped forest. It grew well under strong sun-light. In the rainy season, when there was no more wild fire, Siam weed grew rapidly along with Khrua Ee Thao (Tueraria thomsonii), another type of pioneer plant. The soil was moist enough for wild bananas to grow naturally. "The existence of wild bananas was a good sign to show that the KPM forest has coming back to life".

Lessons Learnt: From Conflict to Co-management and from a Bare Mountain of Wild Fire to a Secondary Moist Forest

The case of KPM clearly showed that by maintaining positive relationships between the project and community (e.g. organizing social events together), and showing commitment of project staff to the serious nature of the project, the number of fires has decreased significantly. This has allowed not only the plant community to change, but also the animal community. *Eupatorium odoratum,* wild banana (an indicator of moist condition of the area), bamboo, herbs, shrubs and many species of vines that are palatable to wild mammals now replace *Imperata* grass. Gaur *(Bos gaurus*), a species of wild cattle, numbering 2-3 individuals at the outset of this

project now can be seen in herds as big as 2-50. Other animals frequently found are wild pig, deer, bear, jungle fowl, viverrids, mustelids and snakes. Large herds of wild pigs encourage seed germination by churning up the soil through their natural behavior of rooting around for food. Other tree species like *Anthocephalus, Macaranga* and *Dipterocarps* are also found. Currently, there are no rifles in Khao Phaeng Ma, which aids animal protection measures. The people's attitudes have changed with time from collaborating in forest restoration/rehabilitation programs through fire protection to enhance natural regeneration and wildlife protection. Now visitors come to these areas to observe the big herd of gaur (*Bos gaurus*) on the regenerated forestland. Gaur's return in such great numbers, and the revival of the watershed, are both sources of pride for the local villagers. Villagers are aware of the benefits of restored/rehabilitated forests, including a reliable water supply and the potential for developing ecotourism.

Thus, the Reforestation Project has not only turned a barren area (grassland) to green, it has also helped a group of wild gaurs there to increase in number from less than 10 a decade ago to more than 90 today. This case of KPM clearly shows that strong support/participation of a local community in forest restoration happens only after resolution of land-use conflicts and built up positive relationships through attending to local development needs. This generates mutual trust and partnership, allowing villager's capabilities to extend from forest restoration to wildlife conservation and management of other resources. People always want to maintain and restore their local environment, as it is vital to their daily life. By empowering villagers and focusing on the community's local knowledge and needs, villagers are valuable partners in assessing, planning and managing their resources.

CONCLUSION

Based on the analysis and finding of this study, following conclusion were drawn: This research has tried to study the existing characteristics or resources that are appropriate for ecotourism development at KPM. As it is defined in the concept of "ecotourism", natural resource is a precondition for developing ecotourism. KPM is a valuable resource for both natural physical and biological resources. The landscape (natural physical feature) of KPM is unique and outstanding containing a range of hills/mountains. Also, KPM has a successful secondary forest and rich in plant genetic diversity (natural biological resources). This important habitat harbor some globally significant wildlife, such as, the gaur and this makes the site (forest reserve) as an important conservation area for maintenance of biodiversity. Within the framework of these core resources, the most attractive resources which have higher potentials than other resource factors are cultural resources, as well as, the education and interpretation programs of the reforestation project. Since the villagers who will manage and provide service for ecotourism is strongly related to community forests. So, in the original period of ecotourism development, ecotourism sites and activities should be promoted to KPM's local communities and homesteads too.

Based on the potentials which the KPM has, ecotourism development could be completed by mobilizing of all components of both human resources and natural resources including agricultural systems as a tourism product.

In terms of prioritizing ecotourism requirements, the attractions and activity sectors at KPM were the key component in the tourism system. It determined either decrease or increase the number of tourists visits to KPM. Visitors come to KPM 'to see and do things' and it is the attractions sector that provides this opportunity. They were the main motivators for tourist trips and are the core of the tourism product. Most attractions at KPM focused on wildlife and mountain (landscape) viewing, while hiking, forest walking and reforestation activities were secondary attraction.

The study results identified and grouped tourism development problems and issues at KPM as the following: natural resource deterioration (deforestation and degradation), low tourists satisfaction, low environmental awareness of locals and tourists, low locals involvement and weak coordination with other agencies. Most of the problems in local community participation to ecotourism development involved human resources management and social development.

This study has also looked at the local resident dimension of ecotourism development at KPM community by means of investigating local's perception and willingness. Most of local residents were aware of the impacts of ecotourism particularly economic impacts were appeared to be high. Whereas the local have doubt in socio-cultural and environmental impact especially positive social and environmental impacts which promote them to conserve the environment, culture and lifestyle as a result of the need for greater awareness building about ecotourism, its principles, its concept, its benefits and its costs. Education and public relation about

ecotourism can be conducted for all types of people irrespective of their demographic and socioeconomic characteristics; this was confirmed by the study.

Besides, local residents have been found to be largely supportive of ecotourism which their expectation of economic benefit as first priority. Moreover, the study has its evidence shown that local residents were highly wiling to participate in the 4 defined project cycles. Active participation was the most favorable means which they can share the experiences and opinions. The training programs proposed by the government, promotion of skill development in making handicraft for the community and building awareness on natural resource conservation program was found to be favorable. Ecotourism activities are incentives for improving their income and conservation of natural resources. Restaurant, local food, and local guide are the interests of the majority.

Studies have proved that attended meeting in planning stage, receptivity of ecotourism income, and local need for ecotourism are the significant determinants of local residents' willingness to participate in ecotourism development. This can be a guide for planner to take into consideration of how to plan ecotourism development in this area.

Developing tourism or ecotourism in ways that are more appropriate for communities takes considerable effort: extension inputs, participatory planning, conflict resolution procedures; setting up local enterprises, developing relevant skills, mobilizing communities to strengthen their rights and management over resources, building cooperation between residents, private operators and protected area managers, and linking into the international tourism market and so on.

Government policies can considerably enhance or inadvertently constrain, local's involvement in tourism. It is also evident that local level facilitation by NGOs or extension officers can help communities address some major development challenges and that new private sector approaches are needed. But often the appropriate roles of different stakeholders are not clear or their different approaches can conflict. So efforts to enhance community involvement in ecotourism need to address the roles and skills of all stakeholders and how they can be improved.

In order for ecotourism to encourage patterns of sustainability, which can benefit local communities, protect the environment, and be economically viable, it must be comprehensive and account for the complexity of issues that have been mentioned in this research. Failures to identify the impacts and challenges of ecotourism and confront them will likely lead to projects that do not benefit local communities, are environmentally destructive, and will not thrive in the long run. Neglect of conservation and quality of life issues threatens the very basis of local populations and the viable and sustainable tourism industry. Unfortunately, exploitation of natural areas for instant profit is a common mistake motivated by human's shortsightedness. Social equity and environmental responsibility must be pushed to the forefront of the policy agenda in order to maximize ecotourism's potential to promote sustainable development.

RECOMMENDATIONS

Results from data analysis briefly presented above, led to the following recommendations that should be considered by KPM's local government and resource management authority to develop policies regulating the management of resources (ecosystem) for ecotourism development.

Recommendation for Resource Protection

The development and operations of an ecotourism industry must address environmental protection to accommodate the expected visitors. The "first step" in ensuring that resource protection is considered in tourism operations is to identify it clearly as a goal of business practice. Options that should be used or suggested for reducing the negative impacts of ecotourism and for maximizing its contributions to rural development and environmental protection include:

- Regulatory (and voluntary) controls on the numbers, activities, and movements of visitors within protected natural areas;
- Consumer education and awareness;
- Environmentally and socially sensitive setting of tourist infrastructure (within or bordering on ecotourism sites);
- Reliance, where possible, on local labor and materials for visitor lodging, and on use of other local products (food, crafts) to serve visitor needs;
- Accommodation, to the extent possible, of traditional right and resource use in protected natural areas;
- Increased local involvement in decision-making at all levels;
- Private sector participation in nature tourism and conservation; and
- Integrated and collective resource management involving all stakeholders.

Users (both tourists and locals) cause unnecessary damage to an environment in many cases out of ignorance. One way to prevent such damage is education: codes of ethics, films, or other orientations to a site are initial ways of opening eyes. Increasingly, tour operators and conservation societies that sponsor ecotours are formulating or adopting codes of ethics designed to provide guidance to visitors on proper and improper behaviors and activities at ecologically sensitive sites.

Recommendation for Ecotourism Management Strategy Developments

To ensure that ecotourism at KPM is sustainable, it is necessary to implement an effective management program that involves all stakeholders in a dynamic and creative ways.

KPM's local government should develop specific resource management guidelines which address cultural and environmental issues with respect to:

- Ecosystem protection,
- Land-use and tenure,
- Natural resources,

- Infrastructure (utilities, transportation, and communications),
- Accommodation,
- Safety and security, and
- Ecotourism operations.

Planning and management strategies to make the most of existing resources for ecotourism include applying the principles of:

- **Renewable resources:** using renewable sources of energy like solar power, replenishing animal stocks, reforestation etc.

- **Multiple-uses:** using forests as natural resource, as well as for their recreational value.

- **Conservation and preservation of resources:** saving and preserving all resources in their original state and maintaining natural processes.

- **Zoning (Designated areas) for use:** targeting specific core areas and corridors in order to minimize impacts on the overall environment. Through the zoning system, the management authority, whether the KPM community or the forest management authority, can ensure that ecotourism activities take place at a sustainable level that will maximize benefits and minimize negative impacts.

- **Visitor site planning and design:** facility and services improvement and control.

- **Sustainable infrastructure design:** infrastructure in harmony with its environment.

- **Impact monitoring and design:** Specific indicators and standards should be established to monitor the impacts of the sites (KPM's) use an ecotourism location/destination.

- **Naturalist guides program development:** guiding is an obvious economic opportunity for people from local communities at KPM. To inspire visitors for becoming supporters of conservation, naturalist guides truly could play a multi-faceted role as: Nature interpreter; Conservationists; Forest rangers; Monitor of tourism impacts; and Liaison with local communities. A pool of trained naturalist guides could be a tremendous asset to protected/natural area conservation. Therefore, creating a naturalist guide program should be a high priority for all sites with an ecotourism project at KPM.

Recommendation for Minimizing Negative Environmental Impacts

a) Provision of specific guidelines for visitors

Specific guidelines are the most appropriate when made available on-site. If the tourist can view the impact of tourism or see the fragility of natural area being protected after reading the guidelines, it will make all the "do's and don'ts" more clear. It is particularly effective to back-up printed guidelines with a briefing. The RFD/project staff should be knowledgeable about tourism impact in explaining the guidelines and giving examples of impacts. Knowledge about local culture and community should also be given.

b) Enforcement of laws

It is necessary to control the local people and tourists to follow the reserve forests rules and regulations. A policy should be established which bans the payment to guides by the tourists in order to get closer to wildlife.

c) Solid waste management

In KPM, most of local concerns are the dump ground for solid waste. The agency concerned should take into account because it may bring about the environmental problems. Water supply in the community is found that inadequate in dry season, thus, it is essential to be improved.

Inappropriate enterprises such as beer-bar, discotheque, karaoke, etc. which most of villagers don't want them should be prohibited in order to make the community tranquil and to minimize the cultural impacts.

It is needed to increase the number of garbage containers around the area and in campgrounds. Durable waste containers should be placed on the nature trails at about 50 meter intervals. Collection of solid waste should be done regularly and recycle of solid waste should be considered.

d) Defining the boundary of forests

Though, there is a boundary, but it is conflicting to the villagers. Villagers still claim for lack of recognizable boundaries. Therefore, well maintenance and clear demarcation of the boundary, especially along agricultural area and close to villages should be continued. A combination of boundary posts can also be used. Village meeting can be utilized for informing the people.

e) Restoration of landscape

Realizing the importance of watershed protection, species conservation and recreation, ecological condition of deforested and critical forest land need to be improved. Out of 11,250 rai of KPM's reserve forest area, present reforestation

project covers only 5,000 rai and the rest of the forest land is heavily encroached and degraded by local people mainly for agriculture and houses, which is an urgent issue of KPM to bring under continuous and further extended reforestation programme.

Apart from poaching by local people, the economic/agricultural development and resulting deforestation, forest fragmentation, and conversion caused the declination or reduction of some animals, especially the Gaur at KPM. This area of KPM is considered an important research area in Thailand, which could become the most important "Gaur study" area in the world. Therefore, this critical forest reserve should be restored and maintained as wildlife habitat, especially "the Gaur Habitat". Thus, to maintain additional/expanding corridor and protected area network; as well as, to provide food, shelter, and habitat for large mammals like gaur, deer etc. and their increasing populations, continuous afforestation, reforestation and enrichment planting should be implemented.

f) Road-side tree plantation

Implementation of afforestation activities, especially along the road going to Wang Nam Khiao is necessary for the areas environmental protection and to maintain the natural beauty of the area.

Recommendation for Maximizing Local People's Benefit

a) Provision of nature guide training

Local residents can be trained to work as guides for hiking or trekking. Besides the knowledge of the natural area of KPM as the most important aspect, customs, value systems of tourists coming to KPM from different cultural background and language training are also important elements.

b) Improvement of local transport linkage

Tourists spent the biggest percentage of their total expenditures in KPM for transportation. KPM is not a regular route of local transportation, therefore, it is important to have dialogue and meeting with local transport operators to set the fair price, to disseminate information, to give better image for tourists and to avoid over exploitation on tourists. These efforts will promote the use of local modes of transportation, thus, sustain the benefit of local transport and finally, lead to raise the environmental awareness of local transport operators.

c) Improvement of linkages to agriculture

As mentioned earlier in this study, it is essential to develop local agricultural products for the tourism market since substantial tourism expenditures go toward purchasing food, much of which is usually imported from other areas distant from KPM.

d) Promotion of local handicraft and other souvenirs

Souvenir sales are often the easiest way for local resident's to benefit from tourism spending. Shopping for handicrafts, souvenirs and general consumer goods is an important activity for many tourists and can constitute a major component of tourist's expenditures and source of income from tourists. Handicraft should not be based on consumption of flora, fauna or other resources when this consumption will endanger these resources.

e) Provision of lodging located in local villages

It may be best to locate infrastructure outside the forest reserve/project area, thus, reducing negative ecological impacts, while increasing opportunities for local people to participate in the tourism economy. However, careful planning is very important when developing these additional facilities to avoid negative social and cultural impacts.

f) Promotion of proper sanitation

Based on the evaluation of the villager's health condition, poor sanitation is the main health problem for the local people. The project is proposed to create and improve health awareness of local people, especially for drinking water treatment and toilet condition.

g) Training for skill development

Provision of training programmes for local resident's in order to increase employment opportunities. This project is to ensure that local people posses the technical, managerial, social skills and environmental knowledge to effectively work, especially, in conservation fields, such as plantation; construction and maintenance of nature trails or tourism related activities. These efforts must go together with policy for maximizing employment of local personnel in the conservation efforts and tourism facilities and services.

Recommendation for Promoting environmental awareness of visitors and local's

a) Provision of environmental learning center

The project is to improve the role of KPM reserve forest as a research and education facility. The reserve's visitor-cum-training centre which contains a number of displays on various aspects of the area of KPM can be developed as the information service centre.

Unless the community/visitors/users are well informed about the nature, status and importance of protected areas, there will be little sympathy for management or conservation objectives. The constant provision of information is one way of minimizing problems of protected area visitors/users. Hence,

education/interpretation (such as slide presentation, exhibition and park information distribution) and public relation programs need to be expanded. More information on park regulations, information related to park ecosystem and its conservation, and information on direct and indirect benefits from protecting natural ecosystem, should be provided to local people.

Moreover, the resource management authority should regularly collect statistical data of visitors, climate, illegal use, and resource diversities, as well as, to encourage research and studies about the reserve forest. An additional value would be the effect of this education on the future actions of visitors.

b) Encouragement of resource-user associations

Resource-user associations in nature-based activities, such as, hiking, trekking, nature photography etc. and youth group will encourage the members to adopt guidelines, to help upgrade membership ethics and to promote commitment to conservation.

c) Setting higher and differential price for entrance and use fees

The reserve currently does not charge entrance fees. Experience suggests that charging fees will reduce litter and vandalism at natural areas. The goal of maximizing profit is not the same as maximizing revenues. Revenue maximization generally results in trying to attract as many tourists as possible, but profit maximization may occur at lower visitation levels, since the financial, ecological and social cost of tourism can increase more quickly than revenues at high visitation levels.

The individual who receive the benefit from the forest reserve should pay the cost of maintaining it. In this sense, average foreigner will be wealthier than the average domestic visitors. Higher and two-tier fee system could be established without significantly reducing the number of visitors.

d) Setting visitor management programme

Tourist activity can also impact on the quality of visitor experience. Many ecotourists seeking an experience in nature are sensitive to perceived over crowding or environmental impacts, such as, littering, vandalism, and noise pollution. Dissatisfied visitors through ‘word-of-mouth’ are likely to erode the reputation of a PA as a quality tourism destination resulting in a reduction in visitation and loss of economic benefits. Visitor management program can be set-up to prevent negative impacts from ecotourism, as well as, enhance the quality of the ecotourism experience. Strategies for visitor management may include:

- Controlling carrying capacity;
- Seasonal control for the well-being of wildlife;
- Visitor responsibility and discipline orientation;

- 'Take-in-take-out' trash regulations in remote areas; and
- Maintaining visitor registration/booking before activities in remote areas.

e) Provision of new hiking/trekking routes

This is the project of development of the existing trails and provision of new routes. More opportunities to contact with nature, to view wildlife should be made available. By diversifying the location of hiking and limiting number of visitors, nature-based management can reduce congestion (overcrowd/noise) and disturbance of flora and fauna. The same routes can be utilized for bird watching, video tapping, sound of nature audio tapping, nature photography and self-guided tour.

Recommendation for Tourist Facility and Services Improvement

a) Construction of additional toilets and restrooms

The aim of this project is to construct additional toilets and restrooms in the project headquarter and camping ground, as well as, to improve maintenance of cleanliness in the existing toilets.

b) Provision of facilities in viewing points

More opportunities to view wildlife and landscape should be made available by maintenance and improvement of existing viewpoints and where possible by reconstruction.

c) Improvement of water reservoir

Improvement of water reservoir at uphill area of visitor-cum-training center to reduce the problem of water shortage in dry season.

d) Improvement of paths and side-walk

Hiking, especially for foreigners, is one of the important tourist activities in KPM. Special attention should be given to properly maintaining and marking existing trails.

e) Improvement of traffic or regulatory signs

More and better road signs should be placed along the road. More signs are needed to inform tourists the location of facilities and the areas attractions. The content of signs should fulfill the reserve's objectives, and clear enough for visitors to learn and use information signs.

e) Promotion of new activities

The area of KPM should motivate tourists to do creative activities and enhance the quality of visitors experience and access to exercise. Appreciative recreational activities can be further developed, such as bird-watching, nature photography, video tapping and sound of nature video tapping.

Recommendation for Forest Administration

Forest administration should be planned for more decentralized form of forest authority concerning budget and authority to carry-out its activities. The forest reserve can retain part of its revenue that ecotourists are willing to pay to improve its own facilities, finance research, and undertake other educational activities. Coordination with other institutional agencies, such as Forestry Protection Division, Provincial Nature Conservation Committee, Regional Forestry Office, Provincial Office, NGO and especially Tourism Authority of Thailand (TAT) should be improved.

Recommendation for NGO's and Grassroots Organizations

As a result of the direct links between ecotourism and conservation, many conservation NGOs and Grassroots Organizations like WFT are becoming more and more influential in the ecotourism industry in Thailand. International and national NGO's, which are focused on conservation, in particular, have initiated ecotourism-linked departments, programs, studies, and field projects. In case of KPM, ecotourism has been chosen by local communities as their preferred development alternative. There is much concern throughout the area that local communities are entering into the ecotourism market without understanding how to commercialize their product. As an authority responsible for the areas sustainable development through community forestry project, WFT has a role to play in assisting local communities in the design of viable sustainable development projects. WFT can contribute greatly towards the improvement of local people in the tourism sector, as well as, towards the improvement of their agricultural techniques through programmes of training, relevant technical information expertise and environmental education. Also, NGOs should act as facilitators between other players in the ecotourism context, e.g., communities and the tourism industry, and protected area managers and communities. This role is a particularly valuable one since NGOs are frequently seen as neutral players among competing interests that have had difficulty collaborating before.

Recommendation for Local communities

Mass tourism is sometimes opposed because of the perception that it does not benefit local people. By contrast, ecotourism is perceived to be a positive force in the community. However, it must be endorsed and supported by everyone. The government should take the lead in coordinating the development of ecotourism, but the control and management of resources should involve the entire community. Ecotourism should sustain the natural resources, but it should also serve the social, cultural and economic needs of the people. As such, it can be best incorporated into

the community by an approach like community-based economic development (CBED).

Ecotourism, as a means of blending conservation and development, has proven to be most successful in areas that are locally managed. CBED is an essential element in the framework of ecotourism development.

Experience with community-based ecotourism development in other places and developing countries like Nepal, Costa Rica and Belize has prompted to make the following recommendations for future community-based ecotourism planning:

- **Community level:** All development plans which include the use of local resources must be planned and implemented at the community (village) level.

- **Local integration:** There must be equitable benefits and integration of local people as partners into the design and implementation of ecotourism projects affecting subsistence patterns.

- **Broad-based, legal, local empowerment:** The local people must become the advocates for conservation and preservation of resources. Educational programs must be made available to provide the people with adequate knowledge to become responsible stewards of their resources.

- **Use existing resources:** Economic leakages can be reduced by increasing the use of local labor, materials, and skills.

- **Appropriate scale:** Ecotourism should not be relied upon as the sole economic contributor. Design and development should occur on a scale appropriate to the community lifestyles, social structure, cultural world view, subsistence patterns, and organization.

- **Sustainability:** The concept of conservation for sustaining ecotourism as an economic contributor should result in the long-term commitment of donor agencies and funding organizations.

- **Local needs and conservation are primary:** Ecotourism must act as a means to protect and preserve natural areas and their resources. The needs of the local people and the natural resources must have priority over the needs of the tourists. Ecotourists must be informed and educated so that they willingly modify their behavior in order to prevent degradation to the local environment and culture.

- **Conservation as a viable development strategy:** Policies advocating environmental preservation should be considered as a long-run development strategy.

- **Government support:** Governments must actively support the development of community-based ecotourism. Support should be both financial and legal, and should facilitate communication between the local and national governments.

Recommendation for Local Government

There exists a large potential to increase agricultural production and farm income in the hilly areas. Local government has to look at into their relationships among components of farming system and relates it to ecotourism development; soil conservation practices, including contouring, strip cropping and terracing should be demonstrated and promoted for wider adoption by farmers in KPM. Better monitoring of slope land agroforestry is necessary to ensure proper conservation of these lands. Training and education of farmers on the adverse impacts of slope lands and importance of soil conservation may be useful to encourage them to adopt right practices.

Recommendation for Tour Agencies or Guides

In order to minimize the negative effects of local social and cultural stereotype, which influences local community's attitudes towards tourists, it is necessary that tourist agencies make an effort to obtain cultural information on destinations. Ideally, tourists and local's should have an opportunity to meet and to demonstrate their own values and customs, and for tourists to enjoy the cultural attractions of the destination through contact with local residents.

Recommendation for Further Research

Since this study focus on KPM Reserve Forest, it could not be generalized to other tourist destinations; further researches will be better conducted in the wider scope. There are several fields that this study did not cover, which need to be explored in order to give a multi-disciplinary approach in tourism development, such as economic and environmental dimensions. In order for NGO, local government and tourist agencies to develop a better understanding of the problems, similar study should also be conducted in other tourism destinations in other provinces of Thailand, by involving a team of researchers from various fields, such as, forestry, economics, agronomy, health, together with sociology and anthropology.

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APPENDIX

APPENDIX - I

Ecotourism Resource Inventory Form (adapted from Ritchie and Grouce, 2003)

APPENDIX -I

Ecotourism Resource Inventory Form (adapted from Ritchie and Grouce 2003)

Resource attractions	Presence/ Availability (yes/no)	Quantity No./types	Quality rank (1-5)	Capacity to absorb tour (low-med-high)	Potential (low-med-high) and notes
Natural attractions					
Landscape					
Temperature					
Rainfall					
Climate					
Mountains					
Forests/plants					
Wildlife					
Nature trails					
Hiking trails					
Wilderness areas					
Cultural/Historical attractions					
Culture/history					
Visitor centers					
Festivals					
Special events					
Traditional life-styles					
Accommodation					
Tent/Campground					
Hotels/Motels					
Eco-lodges					
Resort/Restaurant					
Transportation					
Car/Bus					
Infrastructure					
Access					
Electricity /phone					
Activities					
Wildlife viewing					
Sight-seeing					
Trekking					
Relaxing					
Human resources					
Community leaders					
Interpreter					
Bilangual/Trained guide					

APPENDIX - II

Visitor's Survey at Khao Phaeng Ma

APPENDIX - II

Respondent's ID no.

Questionnaire-I: A Survey to Understand Visitor's Behavior and Need in Khao Phaeng Ma Reserve Forest, Thailand

Department of Conservation, Faculty of Forestry, Kasetsart University, Bangkok, Thailand

Dear visitors

Welcome to Khao Phang Ma Reserve Forest. I am a graduate student from International Tropical Forestry Programme of Kasetsart University, Thailand, conducting this survey to gain an understanding of tourist's opinions concerning ecotourism development at Khao Phang Ma, the nearby tourism destination of Khao Yai National Park, Thailand. Please complete this questionnaire and return it to the research attendant. Your contribution will be much appreciated. **Thank You.**

A. <u>Your (tourist's) Traveling Patterns and Expectations</u> (Please use only one check mark (✓) to indicate your answer)

1. To you, traveling in this place at Khao Phang Ma is:

[ ] A planned activity
[ ] An unplanned activity

2. Have you ever visited to this site/area before?

[ ] No
[ ] Yes, please tell how many times, including this time …... trips/visits

3. What is the main purpose for this trip to this site?

[ ] Vacation/ Holiday/Leisure
[ ] Research
[ ] Nature study
[ ] Official trip
[ ] Business trip
[ ] Meeting/Workshop/Seminar/Conference
[ ] Visiting friends/relatives
[ ] Others (please specify) ……...

4. What kind of media that most affected your decision on selection this site as your tourism choice?

[ ] Radio program [ ] Television program [ ] Internet/Video program
[ ] Tour agencies [ ] Brochure of destination [ ] Friends/relatives/word-of-mouth
[ ] Travel/guidebook/Magazine/Newspaper
[ ] Others (pls. specify) …….

5. In the past years, about how many times have you traveled in a natural environment/Forest/ National Park and Protected Areas?

[ ] 0 times [ ] ……..… times [ ] More than …….. times

6. How would you rate the importance of Forest/Protected Area as a tourist attraction?

[ ] Not important
[ ] Less important
[ ] Moderately important
[ ] Highly important
[ ] Highest/Extremely important

7. Which of the following ecotourism activities did you participate or would you like to do during this trip while visiting this tourism site? [More than one answer can be marked (✓)]

	Activities	**Expect/ Prefer to participate**
1	Mountain/Hill viewing	
2	Sight-seeing/Nature appreciation	
3	Plant flora (Forests/trees/flowers) observation	
4	Animal fauna (Bird/Gaur/Elephant) viewing	
5	Nature trail/ Forest walking	
6	Mountain trekking or Hiking (to find adventure)	
7	Taking Photographs	
8	Relaxing in peaceful environment	
9	Visit local farm/villages/farmer	
10	Others (please specify)	

8. For this trip how does your trip organized?

[ ] Travel alone
[ ] With family members (specify) …… persons (including yourself)
[ ] With friends/colleagues (specify) …… persons (including yourself)
[ ] Others (please specify)

9. In future (even though there is none provided in this site at present), what type of accommodation do you prefer most?

[ ] Guesthouse/Bungalow
[ ] Apartment
[ ] Townhouse:
[ ] Campground/Tent
[ ] Hotel/Motel
[ ] Resort/Restaurant
[ ] Others (pls. specify) ……

10. In order to putting forward a quality product and to provide a high quality experience, it is helpful for us to know, what are the "primary attractions" that motivates you and your group to visit this site. Listed below are a number of possible reasons why ecotourists might visit this site. Please indicate how important each reason is to you by ranking an appropriate number beside each statement. [Please indicate your answer by ranking numbers from 1 to 5 for your levels of important, where 1 = Not important (NI); 2 = Less important (LI); 3 = Moderately important (MI); 4 = Highly important (HI); and 5 = Extremely/Highest important (EI) respectively]

	Possible motivations/ attractions for visiting KPM	**Important levels**				
		EI	**HI**	**MI**	**LI**	**NI**
1	Scenery	5	4	3	2	1
2	Mountain or hill	5	4	3	2	1
3	Trees and Forests /protected areas	5	4	3	2	1
4	Gaur	5	4	3	2	1
5	Diversity of plants	5	4	3	2	1
6	Diversity of animal	5	4	3	2	1
7	Adventure	5	4	3	2	1
8	Relax (outdoor recreation)	5	4	3	2	1
9	Diversity of tourism activities/variety of recreations	5	4	3	2	1
10	Community and culture	5	4	3	2	1
11	Others (pls. specify)					

11. Taking into consideration all the possible motivations/attractions listed above, how would you rate your overall level of satisfaction?

[ ] Not satisfied [ ] Less satisfied [ ] Moderately satisfied [ ] Highly satisfied
[ ] Highest/Extremely satisfied

B. <u>Your (tourist's) perception on problems related to environmental management</u>

12. What kind of problems you encountered during your stay/traveling in this tourism site and how severe those problems are? [Please indicate your answer by using 4 = Serious problem, 3 = Problem, 2 = Indifferent (it happened but didn't annoy) and 1 = No problem]

Problems	**Problem levels or severity**			
	Serious problem	**Problem**	**Indifferent**	**No problem**
1) Litter cans absent	4	3	2	1
2) Cleanliness of the tourism site	4	3	2	1
3) Sanitary installations precarious	4	3	2	1
4) Missing or inadequate information	4	3	2	1
5) Public restrooms absent	4	3	2	1
6) Tap/pipe-line water unavailable	4	3	2	1
7) Lacking telephone facilities	4	3	2	1
8) Electricity unavailable	4	3	2	1
9) Poor access	4	3	3	1
10) Overcrowded	4	3	2	1
11) Missing gastronomic services	4	3	2	1
12) Safety and security during trip	4	3	2	1
13) Vandalism	4	3	2	1
14) Conflicts with other recreational activities	4	3	2	1
15) Environmental impacts	4	3	2	1
16) Others (pls. specify)	4	3	2	1

13. While traveling to your ecotourism site, please indicate which of the following situations you have seen? (Please use check mark (✓) all those to indicate your answer)

[ ] 1. Ecotourists resting on seedlings or branches of young trees
[ ] 2. Ecotourists breaking off a piece of minerals or branches of trees
[ ] 3. Ecotourists following park animals
[ ] 4. Ecotourists feeding animals
[ ] 5. Ecotourists touching animals
[ ] 6. Ecotourists littering or disposing of garbage on the nature trail or forest floor
[ ] 7. Vehicles parking on the prohibited areas
[ ] 8. Ecotourists capturing, hunting or killing wildlife (birds or animals)
[ ] 9. Ecotourists noising too loud disturbing peaceful environment
[ ] 10. Others (Pls. specify) ……

14. Overall, how would you rate your traveling experience compared to your expectations?

[ ] Very poor [ ] Poor [ ] Not sure [ ] Good [ ] Very good

C. <u>Your (Ecotourist's) opinions about management strategies</u>

15. Please indicate how strongly you oppose or support the following possible management alternatives for recreation in this site by using a circle or check mark (✓) an appropriate number beside each statement. [where 1 = strongly oppose (SO); 2 = Somewhat oppose (O); 3 = Neither oppose nor support (N); 4 = Somewhat support (S); and 5 = strongly support (SS)]

Possible management alternative	SO	O	N	S	SS
1) Restrict the number of tourists allowed to visit the park per day	1	2	3	4	5
2) Improve opportunities to learn about forest ecosystems	1	2	3	4	5
3) Restrict the number of vehicles allowed the tourism site per day	1	2	3	4	5
4) Increase the strength of staff	1	2	3	4	5
5) Increase the number of Trails	1	2	3	4	5
6) Set visitor management program	1	2	3	4	5
7) Provide more nature interpretation and environmental education signage	1	2	3	4	5
8) Prohibit tourist/other recreationists from hunting or feeding wild animals	1	2	3	4	5
9) Limit visitor's access to the deep of the wilderness to prevent wildlife and habitat destruction	1	2	3	4	5
10) Introduce zoning system to provide space for wildlife and sustainable use of the park/forest resources	1	2	3	4	5
11) Others (pls. specify)	1	2	3	4	5

16. Would you be willing to pay/agree additional money with charging entrance fees for the protection of the environment and the tourism site you visited? [Please indicate on the scale either you disagree (no) or agree (yes) by circling only one number on the scale from 1 to 9]

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Strongly disagree		Somewhat disagree		Neutral	Somewhat agree		Strongly agree	

a) **How much would you be willing to contribute? (Pls. specify) .....… US$/Th.B.**
b) **Why?** ……

D. General information about yourself

To help us understand your opinions, we are interested in learning a bit about you. (Please use only one check mark (✓) to indicate your answer)

17. Gender? [ ] Female [ ] Male

18. Your age? …… years

19. Your highest level of education?

[ ] Not educated
[ ] Primary school
[ ] Secondary/High school
[ ] College/ Diploma
[ ] Bachelor's degree
[ ] Master's degree/higher
[ ] Others (pls. specify) …….

20. Occupation

[ ] Farmer
[ ] Student
[ ] Self-employed
[ ] Private company
[ ] Government services
[ ] Housewife
[ ] Others (pls. specify) …….

21. Your province/state/country of residence? …….

22. Is there anything else you would like to comment on the quality of the tourism sites or on any other aspects of your traveling experience at Khao Phang Ma? If so, please use the space below to express your views.

Your comments/suggestions

Thank you for taking the time to complete this survey. Please return it to the attendant.

APPENDIX - III

Local Resident's Survey for Local Involvement in Ecotourism Development at KPM

APPENDIX - III

Questionnaire-II: Local Resident's Survey for Local Involvement in Ecotourism Development at Khao Phang Ma, Thailand

Part – I: Resident's profile

1 To help us understand your opinions. Please use a check mark (√) to indicate your answer or fill in the blanks

1.1 Gender: [ ] Male [ ] Female

1.2 Age: ……. years

1.3 Place of origin (district/province/state): ……..

1.4 Education:
[ ] Not educated [ ] Primary school [ ] Secondary/High school
[ ] College/ Diploma [ ] Bachelor's degree [ ] Master's degree/higher
[ ] Ph.D [ ] Others (pls. specify) …….

1.5 Occupation:
[ ] Mixed orchard/agriculture [ ] Fishery [ ] Business/trade
[ ] Employee/worker [ ] Civil servant [ ] Others (please specify) ……

1.6 Land holding: [ ] Owned land …. rai [ ] Rented land … rai [ ] No land

1.7 What is your household's average net yearly income from all sources (Bhat)?

1.8 How long have you been in this area……. years?

1.9 Is your job related to tourism (e.g. resort, restaurant, guide etc.)? [Yes/No]

1.10 Is any member of your family employed in tourism? [Yes/No]

1.11 Are you a member of local organization (cooperative group, women group, TAO member etc.)? [ ] Yes (specify) ……. [ ] No

1.12 Have you ever heard about ecotourism at Khao Paeng Ma (Ecotourism is responsible travel to natural areas to understand the cultural and natural history of the environment. Taking care, not to alter the integrity of the ecosystem, while producing economic opportunities that make the conservation of natural resources beneficial to local people)? [ ] Yes [ ] No

If yes, from whom did you hear?
[ ] Wildlife Fund Thailand (WFT) [ ] Government officials [ ] Newspaper
[ ] Television [ ] Others (specify)

Part – II: Resident's perception on impacts of ecotourism

2 The Wildlife Fund Thailand (WFT) has proposed Ecotourism Development Project in your community. What do you think about the expected economic, social, cultural, and environmental impacts that can result from ecotourism? [Please record whether you strongly agree (SA), somewhat agree (A), neutral (N), somewhat disagree (D), or strongly disagree (SD)with each of the following statements. There is no right or wrong answer, so please give the answer which most closely expresses your perception. [Please use a circle or check mark (✓) to indicate your answer]

2.1. Expected economic impacts of ecotourism development

	Statement	SA	A	N	D	SD
13	Ecotourism will provide more jobs and employment	5	4	3	2	1
14	Ecotourism will attract investment and promote a small-scale enterprise	5	4	3	2	1
15	Through ecotourism our standard of living will increase considerably	5	4	3	2	1
16	Price of goods and services will increase because of tourism	5	4	3	2	1
17	Ecotourism will benefit a small group of residents, particularly the rich group	5	4	3	2	1
18	Ecotourism will contribute to state and local tax base	5	4	3	2	1
19	Others (please specify)	5	4	3	2	1

2.2. Expected social and cultural impacts of ecotourism development

	Statement	SA	A	N	D	SD
20	Meeting tourists all over the world will be a valuable experience and opportunity to learn other people and culture	5	4	3	2	1
21	Ecotourism will promote conservation of traditional culture and value systems [Individual behavior, family relations, beliefs, cultural practices & moral values]	5	4	3	2	1
22	Ecotourism will not alter social structure of community (a rich-class businessman and landowner and a lower-class immigrants)	5	4	3	2	1
23	Ecotourism will promote preservation of life-style of local residents (dressing, eating, entertainment and recreation activities)	5	4	3	2	1
24	Ecotourism will lead to crowding and congestion	5	4	3	2	1
25	Ecotourism will increase the amount of crime, accident, prostitution and drug abuse	5	4	3	2	1
26	Ecotourism will create competition with existing recreation opportunities [in park, forests etc.]	5	4	3	2	1
27	Ecotourism will help build-up awareness/ recognition of the local culture and heritage	5	4	3	2	1
28	Outsider immigration causes conflict with local residents	5	4	3	2	1
29	Others (please specify)	5	4	3	2	1

2.3. Expected environmental impacts of ecotourism development

	Statement	SA	A	N	D	SD
30	Ecotourism will provide incentives for restoration of historical, socio-cultural and natural resources	5	4	3	2	1
31	Roads and other public facilities including electricity, telephone, public transport network, health care and education will be kept at a higher standard	5	4	3	2	1
32	Ecotourism will result in unpleasantly over crowded trails, parks and other outdoor places	5	4	3	2	1
33	Ecotourism will greatly add to traffic congestion, noise, and pollution	5	4	3	2	1
34	Ecotourism will lead to more litter, solid waste, and sewage	5	4	3	2	1
35	Ecotourism will degrade water supply due to excessive uses	5	4	3	2	1
36	Ecotourism will degrade forest ecosystem such as trees, flower and waters due to development of infrastructure/facilities	5	4	3	2	1
37	Others (please specify)	5	4	3	2	1

2.4. Expected overall advantages and disadvantages of ecotourism development

	Statement	SA	A	N	D	SD
38	The overall advantages of ecotourism development outweigh disadvantages	5	4	3	2	1
39	Others (please specify)	5	4	3	2	1

Part – III: Local resident's willingness to participate

3. Please use a check mark (√) to indicate your answer for each of the following questions regarding the participation in ecotourism development in your community.

3.1. Local involvement in ecotourism planning

40. Were you involved with any activities of the Wildlife Fund Thailand (WFT) – the project planners in Forest rehabilitation and ecotourism development planning? [ ] Yes [ ] No

If yes**,** please specify the activities: ……

41. If no, will you participate in the meeting and discussion in ecotourism development planning?

[ ] Yes [ ] No [ ] Yes, if I have available time

3.2. Local involvement in ecotourism implementation

The following statements are the training and development activities which may organize or supported by the Wildlife Fund Thailand (NGO)/ government agencies in order to develop ecotourism in your area. Please record whether you are "interested (**I**)" or "uninterested (**UI**)" any training in these activities. [Please use a check mark (√) to indicate your answer]

	Statement of activities and training	**I**	**UI**
42	Promotion and building up awareness in resource conservation		
43	Plant and animal resources and law enforcement in forest area		
44	Promoting the community organize activities concerning cleanliness and hygiene		
45	How to be a good server for restaurant and other tourism activities		
46	Improving the skill in handicraft		
47	Developing souvenir from local product		
48	Developing local food		
49	Involving local guide		
50	Participatory natural/forest resource management planning		
51	Safety service for tourists		
52	Agricultural product improvement		
53	Agriculture industry development		
54	Promoting herbal plant for health		
55	Voluntary in forest/park management (plant and animal protection)		
56	A guideline for home-stay management		
57	Packaging of local goods		
58	Investment promotion for home-stay with providing a low-interest loan		
59	Others (please specify)		

3.3. Local/resident involvement in benefit-sharing

60. Would you be willing to participate in ecotourism activities to improve your income?

[ ] Yes [ ] No

61. If yes, which of the following activities are you willing to carry out for income improvement? (Please use a check mark (√) to indicate your answer and more than one answer can be marked)

[ ] Local guide [ ] Nature trail guide [ ] Tour operator [ ] Handicraft and souvenir
[ ] Home stay [ ] Resort [ ] Restaurant [ ] Local foods and products
[ ] Cultural show/exhibition [ ] Other (specify) ……..

62. How would you like to start your activities above?

[ ] Individual [ ] Cooperative group [ ] Other (please specify) …….

3.4. Local/resident involvement in monitoring and evaluation

63. Many monitoring and evaluation projects have been set up under the ecotourism development plan e.g. wildlife monitoring, natural resource or ecosystem monitoring, operation of resort and restaurant monitoring etc. Are you willing to be involved or participate in those projects? [ ] Yes [ ] No [ ] Yes, I have available time

64. In your opinion, who conduct monitoring and evaluation project?

[ ] Wildlife Fund Thailand [ ] Government [ ] Community
[ ] Volunteer group [ ] Others (please specify) ……..

65. Why you need ecotourism development in your community?

[ ] Because ……

66. Please feel free to give your any other comments/suggestions. If so, please use the space below to express your views.

APPENDIX - IV

The checklist for semi-structured interview and group discussion

APPENDIX - IV

The checklist for semi-structured interview and group discussion

1. Have you ever heard about ecotourism? From whom?
2. Are you aware of the impacts of ecotourism?
3. What is the most concern of the negative economic, social, cultural and environmental impacts?
4. Do you think ecotourism will increase your standard of living? How?
5. Have you ever been consulted in ecotourism planning? If yes, how? If no, would you like to be involved in ecotourism planning?
6. Given a chance in planning stage, are you willing to participate? How?
7. Are you interested in ecotourism activities? What activities and how you prefer to operate?
8. The WFT/government offers many training programs for local capacity building. Are you willing to participate?
9. Why you need ecotourism in your community?
10. What aspirations and concerns do you have regarding the development of ecotourism in the area?
11. What factors are contributing to the success of the ecotourism as well as reforestation project?
12. What are the main problems and constraints of agricultural development you facing as a farmers at KPM?

BIOGRAPHICAL DATA

NAME	:	Mr. Md. Kabir Hossain Patwary
DATE OF BIRTH	:	1st December, 1969
PLACE OF BIRTH	:	Upzilla - Matlab, District - Chandpur, Bangladesh
EDUCATION	:	

Year	Institution	Certificate/Degree
1984	Aswinpur High School, Commilla, Bangladesh	Secondary School Certificate (SSC)
1986	Hasanpur S. N. College, Commilla, Bangladesh.	Higher Secondary School Certificate (HSC)
1990	Institute of Forestry, University of Chittagong, Bangladesh.	Bachelor of Science (Honors) in Forestry

POSITION AND DESIGNATION	:	Government Official (Assistant Conservator of Forests - ACF)
WORKING PLACE	:	Working since 1993 in Different fields and capacities of Bangladesh Forest Department under the Ministry of Environment and Forests, Bangladesh.
SCHOLARSHIP	:	International Graduate Study and Research in Tropical Forestry for Master's of Science Program (2004-2006) in Kasetsart University Faculty of Forestry, Bangkok.