Ecological Economics

Ecotourism: Potential for Conservation and Sustainable Use of Tropical Forests

A case study on the National Parks Taman Negara and Endau-Rompin in Malaysia

Bernd Stecker

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Acknowledgements

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Bernd Stecker
Foreword

Tropical ecosystems are the essential base of life for the majority of the world's population. Growing degradation of natural resources and the destruction of fragile ecosystems increasingly jeopardise efforts towards sustainable development and poverty reduction.

The Tropical Ecology Support Program (Tropenökologisches Begleitprogramm, TÖB) wants to contribute to an effective analysis, utilization and implementation of know-how and experiences made in this regard within the scope of development cooperation.

TÖB is a supraregional service project conducted by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH on behalf of the Federal German Ministry for Economic Cooperation and Development (BMZ).

On request, the program flanks specific projects with studies focusing on issues relevant to tropical ecology. TÖB wants to contribute to further develop concepts and approaches aimed at the conservation and sustainable use of tropical ecosystems. The analysis and evaluation of the research work provides the basis for designing innovative instruments for a more ecologically-sound development cooperation.

By translating scientific results into action at the extension level, TÖB supports other projects in the implementation of international agreements, in particular Agenda 21 and the Biodiversity Convention, to which the BMZ attaches great importance.

Key element of the program concept is the joint conduction of applied research by German and local scientists. The Tropical Ecology Support Program is thus making an important contribution to the practice-oriented upgrading of counterpart experts and the consolidation of tropical-ecology expertise in partner countries.

This series of publications has been produced in a generally comprehensible form with the specific aim of presenting the results and recommendations of the studies to all organisations and institutions active in development cooperation, and also to all those members of the general public who are interested in environmental and development-policy issues.

Dr. H. P. Schipulle
Head of Division Environment, Resource Protection and Forestry
Federal German Ministry for Economic Cooperation and Development (BMZ)

Dr. J. Friedrichsen
Head of Department Plant Production, Plant Protection, Agricultural Research, Farming Systems
Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
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<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>ASEAN</td>
<td>Association of South East Nations (Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam)</td>
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<td>AWB</td>
<td>Asian Wetland Bureau</td>
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<tr>
<td>BML</td>
<td>Bundesministerium für Ernährung, Landwirtschaft und Forsten (German Federal Ministry for Food, Agriculture and Forestry)</td>
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<tr>
<td>BMZ</td>
<td>Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (German Federal Ministry for Economic Cooperation and Development)</td>
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<tr>
<td>DWNP</td>
<td>Department of Wildlife and National Parks</td>
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<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<tr>
<td>GTZ</td>
<td>Deutsche Gesellschaft für technische Zusammenarbeit mbH (German Agency for Technical Cooperation)</td>
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<tr>
<td>Gunung</td>
<td>Malay for mountain</td>
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<td>IUCN</td>
<td>The World Conservation Union</td>
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<td>KfW</td>
<td>Kreditanstalt für Wiederaufbau (German Bank for Reconstruction)</td>
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<td>Kg.</td>
<td>abbreviation for Kampung (village)</td>
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<td>MNS</td>
<td>Malaysian Nature Society</td>
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<td>MOCAT</td>
<td>Ministry of Culture, Arts and Tourism (Malaysia)</td>
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<td>MTC</td>
<td>Malaysian Timber Council</td>
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<td>MTPB</td>
<td>Malaysian Tourism Promotion Board</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<tr>
<td>NPC</td>
<td>National Parks (Johor) Corporation</td>
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<tr>
<td>Orang Asli</td>
<td>Malay for original inhabitant</td>
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<td>PFE</td>
<td>Permanent Forest Estate</td>
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<tr>
<td>PRA</td>
<td>Participatory Rural Appraisal</td>
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<td>RM</td>
<td>Malaysian Ringit (currency)</td>
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<tr>
<td>TDC</td>
<td>Tourist Development Corporation</td>
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<tr>
<td>TNR</td>
<td>Taman Negara Resort (Hotel)</td>
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<tr>
<td>UNEP</td>
<td>United Nations Environmental Programme</td>
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<tr>
<td>WTO</td>
<td>World Tourism Organisation</td>
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<td>WWF</td>
<td>World Wide Fund for Nature</td>
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Summary

The aims of rain forest ecotourism, particularly in protected forest areas, are to prevent negative environmental impacts and undesirable socio-cultural changes and to promote environmental awareness among those involved, taking the ecological and social carrying capacity of the area into account. The revenue generated from ecotourism should contribute towards funding conservation measures in forest areas and also towards increasing income and employment opportunities for the local population, thus compensating them for the prohibited or unsustainable utilisation of protected forest resources.

In the framework of this concept the socio-economic and ecological impacts of tourism were analysed and evaluated in the Taman Negara National Park so that conclusions could be drawn and recommendations formulated for the promotion of ecotourism in the Endau-Rompin National Park which was established as recently as 1993.

The results in Taman Negara show that the positive effects connected with ecotourism have for the most part not arisen. Although considerable revenue is generated as a result of the money spent by the tourists in the park, 90% of this leaks out of the park region. Economic multiplier effects upon rural development are therefore minimal. Also, revenue within the local population is unequally distributed while, at the same time, rising prices and increase of usage bans have a negative effect on their means of securing a livelihood. The over-use of highly frequented locations results in environmental damages such as erosion of trails and river banks, water pollution, destruction of vegetation, loss of species and abnormal behaviour of wild animals. The reasons for this are primarily to be found in the lack of an effective and overall development and management plan, inadequate control and monitoring mechanisms, diverging interests and ideas of the interested parties involved (government agencies, the tourist industry, the local population) and also inadequate participation of the residents living adjacent to the park area.

On the basis of these findings, guidelines based upon the Endau-Rompin model are drawn up which are proposed as an overall, methodical concept for the planning and implementation of ecotourism projects in tropical forest areas. These are: (1) objectively assess and evaluate the suitability of rain forests for tourism; (2) identify potential conflicts among the participating parties; (3) involve the local communities in planning and implementation; (4) integrate ecotourism into a
comprehensive forest management plan; (5) promote adequate training and 
further education measures; (6) integrate ecotourism into regional rural 
development; (7) identify suitable vector organisations for ecotourism manage-
ment; (8) discover and assess potential sources of finance and revenue; (9) 
integrate ecotourism into sectoral development concepts at the national level.

In view of the uncoordinated development process in Endau-Rompin up to now, 
it is recommended to proceed with caution, adapting to local conditions and with 
a view to participation and cooperation. As a general rule, greater importance 
should be attributed to the potential of ecotourism as a tool for conservation of 
tropical forests, yet its use should not be overestimated. It is recommended that 
ecotourism be included to a greater extent in existing sectoral strategies of 
German development assistance and cooperation.
1. Introduction

1.1 Ecotourism in the context of international tropical forest policies

The question of how to effectively mitigate the increasing destruction and degradation of tropical rain forests has been in the centre of the debate on international economic and environmental policy for a number of years. One of the reasons identified by economists for the over-exploitation of tropical forests is the ambivalent attitude towards marketable forest products, like timber, on the one hand and the non-marketable goods and services provided by forests on the other (DIXON and SHERMAN 1991; THIELE 1994). While it is recognised that the utilisation of and the trade in tropical timber contribute significantly to the economic development of many tropical countries, the conservation of biodiversity and the manifold benefits made available by rain forests such as watershed protection and opportunities for education, research and recreation have not been sufficiently taken into account in terms of their long-term effective potential for the development of society.

Hence, in most cases the latter are regarded in economic terms as “public goods” from which, unlike “individual or economic goods”, such as timber or some non-timber forest products, no consumer can be excluded (DIXON and SHERMAN 1991). Thus, no direct market prices can be established to determine their monetary value. These situations are known by economists as “market failures” with the result that the non-marketable benefits of forests to society are often ignored or grossly underestimated. This can lead to decisions by politicians to allow such forests to be set aside for logging in order to generate an actual revenue from timber concessions, rather than to preserve such forest land for ecological purposes.

On the other hand, the necessary restrictions on the local population accompanying forest conservation measures often represent the loss of important resources for harvesting, agriculture, forage or hunting to sustain their livelihood. The restrictions are therefore perceived as being economically disadvantageous. As a result, conservation measures are often met with antagonism or scepticism by the communities living within or adjacent to the protected forest areas. In view of both these situations, strategies to be successfully implemented for the
protection of tropical forests in the long-term need to address both environmental and economic effects and returns at the national and local level.

Ecologically and socially sustainable forms of tourism ("ecotourism") are now widely regarded as one of the ways in which the economic attractiveness of tropical forest conservation can be increased and further promoted. This has been specifically stressed in the AGENDA 21 document adopted at the United Nations Conference on Environment and Development (UNCED) in 1992, by NGOs like IUCN (CEBALLOS-LASCURAIN 1993) and WWF and TOURISM CONCERN-UK (1992) as well as in the Fourth Tropical Forest Report of the German Government (BML 1995).

It is argued that by placing tourism-related values on dwindling forest resources, the conservation benefits can be provided, at least indirectly, with a market value and thus stimulate the interest of the parties involved to implement or support the objectives for the protection of tropical forests more effectively. However, this presupposes that there is also a corresponding demand potential for the ecotourism market segment. Ecotourism supporters argue about this, referring to several market studies:

- Since the beginning of the 1990s ecotourism is the fastest growing sector in the tourism industry, estimated to have a current growth rate of 10-15% annually. According to the Canadian Wildlife Service, over US $200 billion was spent on "ecotourism activities" worldwide in 1990 (refer to PANOS-INSTITUTE 1995).

- In a study conducted by the WWF it was estimated that out of US $60 billion spent in developing countries by international tourists, between US $2 and 12 billion came from ecotourism. This is already not significantly less than the amount generated by the international trade in tropical timber products, currently valued at between US $10 and 15 billion (DURST 1994).

- A survey among 35 North American-based nature tour operators revealed that 62% named rain forests as the most popular destination of their clients. Islands and high Alpine ecosystems were mentioned by 17% each, and deserts by 4% (YEE 1992).

- Seven million tourists in the United States are willing to pay between US $2,000 and 3,000 for such an ecotour. Also, this survey showed that 63% of travellers would be willing to pay US $50 toward conservation in the area visited, and 27% would pay US $200 (see PANOS-INSTITUTE 1995).
1. Introduction

Studies on the ecotourism value of tropical forests, applying various valuation techniques (e.g., travel cost and contingent valuation method), indicate a considerable willingness-to-pay on the part of the tourists (e.g. DIXON and SHERMAN 1990; TOBIAS and MENDELSOHN 1991; LIM, WONG and KOLLERT 1993; MERCER, KRAMER and SHARMA 1995; ADGER et al. 1995; MENKHAUS and LOBER 1996). In some cases the recreational value was even higher than the value of harvested timber.

On the one hand, these studies show that since the mid-1980s an increasing trend in nature-related forms of tourism has been observed throughout the world. The highest growth rates have been recorded in destinations of the developing countries, especially in Middle America, South and East Africa and Southeast Asia. On the other hand, the various approaches of analysis in each of these market and/or demand studies support the assumption that a very broad spectrum of destinations and, in particular, nature-related activities have been grouped together under the term “ecotourism”. First of all it is therefore necessary to clarify the exact meaning of the term “ecotourism” and to what extent it can be differentiated from already well established nature-oriented tourism forms.

1.2 Definitions: nature tourism, rain forest tourism and eco-tourism

The analysis of numerous definitions indicates that it is useful for the purpose of this study, to especially differentiate between the terms “nature tourism” and “ecotourism”. As VALENTINE (1993) and WESTERN (1993) have pointed out that to most people both terms have the same meaning but this study draws a clear distinction between them.

Nature tourism is already a real phenomenon with certain demand structures. It denotes all tourism directly dependent on the use of natural resources, even if the use is not a wise or sustainable one. It is characterised by the demand for nature-oriented activities in attractive, natural and preferably pristine areas. The activity spectrum ranges from trekking, wildlife watching and nature photography through consumptive resource uses (e.g., fishing and hunting) to sport and adventure tourism (e.g., mountaineering, river rafting, mountain biking, vehicle safaris). Specifically regarding the last group of activities, nature is often used only as a scenic backdrop by both suppliers and consumers without showing an actual
interest in the ecology and culture of the area visited (VALENTINE and CASSELLS 1992; HANNEBERG 1994).

If such nature-oriented activities are carried out in tropical forest areas, then often the term **rain forest tourism** is applied as a more specific description of a nature tourism destination (e.g., HEALY 1988; WEARING and PARSONSON 1991). However, rain forest tourism should not be regarded as a proper tourism segment. It is a virtually congruent subset of nature tourism with essentially identical demand structures which refer partly to destinations in protected and partly to destinations in unprotected tropical forest areas.

**Ecotourism**, on the other hand, as defined by CEBALLOS-LASCURAIN (1993) and adopted by IUCN, is “environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy, study and appreciate nature (and any accompanying cultural features, both past and present), that promotes conservation, has low visitor impact, and provides for beneficially active socio-economic involvement of local populations”.

As with IUCN most authors (e.g., ZIFFER 1989; BOO 1990; FENNEL and SMALE 1992; GIANNECCHINI 1993; GRENIER et al. 1993; VALENTINE 1993; WALLACE 1993; WESTERN 1993; DURST 1994; THEOPHILE 1995) regard ecotourism as a very specific tourism segment, representing a set of idealised development objectives. Although there is a definite overlap with certain characteristics of nature tourism regarding some destinations and activities, the term “ecotourism” should only be applied if additional aspects are equally taken into account. Thus, ecotourism should

- minimise and/or avoid negative environmental impacts as well as undesirable socio-cultural changes;
- increase income and employment opportunities for the local population living in or adjacent to the target area;
- contribute to dispersed rural development;
- provide funds for natural resource conservation on a national and local scale; and thus
- build and increase political support for nature conservation; as well as
- create awareness of nature and environmental issues among the parties involved.
Studies dealing only with certain elements of these requirements have already been carried out in the past (see e.g., BOO 1990; DIXON and SHERMAN 1990; WEARING and PARSONSON 1991; HENNING 1993). However, it is necessary to integrate the economic, social and environmental objectives in order to understand better the interactions between these different requirements of ecotourism. Bearing this in mind, the objective of this study can also be seen as an analysis of the circumstances under which nature tourism can become ecotourism.

1.3 Objectives and methodology

This study was designed to establish whether ecotourism can provide access to attractive sources of income, which would facilitate not only the effective conservation of protected tropical forest areas but also the sustainable development of the buffer zones. This was accomplished by investigating two potential ecotourism destinations in West Malaysia, taking into account the application of preconditions and framework conditions of how ecotourism can be realised. Furthermore, guiding principles and recommendations are developed, which have to be considered in the planning and implementation process of ecotourism projects in tropical forests. At the same time a methodical planning concept has been drawn up to assess the eligibility of ecotourism for aid in the framework of international development cooperation.

The case studies were carried out in two protected rain forests in West Malaysia which are marked by different stages of tourism development. Taman Negara National Park, in the northeast of the country, has already been visited by domestic and international tourists for decades, whereas tourism in the Endau-Rompin National Park, in the southeast and established as recently as 1993, is still in the initial phase of tourism use (Figure 1). In Endau-Rompin the German Agency for Technical Cooperation (GTZ) is supporting the Malaysian Nature Society (MNS), a major conservation NGO active in the country, to draw up, on behalf of the National Parks Corporation Johor (NPC), a development and management plan for the park.

Several objectives have already been proposed for the preservation and conservation of the park’s resources. One of the key elements is that the conservation of the natural resources should be economically ensured in the long-term through the promotion of ecotourism in the park area. The results of this study aim to
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contribute significantly to the implementation of this concept. In accordance with this objective the case study was divided into four phases:

1. Assessment of framework conditions for the promotion of ecotourism in forest areas of West Malaysia;
2. Assessment of features of tourism development in Taman Negara National Park, analysis of economic, socio-cultural and ecological impacts (problem analysis), conclusions;
3. Assessment and analysis of the current level of development in Endau-Rompin (administration, economic use, socio-economic situation of the local population), conclusions;
4. Development of guidelines and recommendations for the planning and implementation of ecotourism projects based upon the Endau-Rompin case study; conclusions for development cooperation.

The collection of data and information was undertaken by analysing secondary literature, evaluation of official statistics and internal papers as well as applying methods of empirical social research, such as participatory observation and informal individual and group interviews with parties involved in ecotourism activities in West Malaysia (government agencies, the local population, tourists, the tourism industry, NGOs). In order to assess and evaluate the socio-economic situation of the local communities in Endau-Rompin with more accuracy, participatory rural appraisal (PRA) techniques were applied (refer to CHAMBERS 1992 and SCHÖNHUTH and KIEVELITZ 1993).
Figure 1: Map of West Malaysia with Location of National Parks

1. National park
2. Wildlife reserve
3. Wildlife sanctuary
4. Forested area
5. Agricultural tree crops
6. Urban areas & other land use
7. 1. International 2. State boundary
8. Roads
9. Railway

[Map of West Malaysia with location of national parks]
2. National framework conditions for ecotourism in West Malaysia

In recent years, the term “ecotourism” has become a buzz-word among Malaysian politicians, tour operators, the public and visitors but little effort has yet been made towards the clarification of the term and/or the concept behind it. “Ecotourism” has been used and is still used freely and interchangeably by all parties. In many cases it has just replaced the term “nature tourism” that tour operators had used in the past to successfully market their products (see WONG 1996). Bearing this in mind, the role of the two most important sectors concerned with ecotourism development in West-Malaysia, that is the tourism and forestry and nature conservation sectors, are analysed in this Section.

2.1 Tourism: development, market segments and policy issues

Until the 1970s tourism development was not regarded as an important economic activity in West Malaysia. The Tourist Development Corporation (TDC) was founded in 1972 with the responsibility to act as a development authority. During the 1980s tourism became an increasingly important industry in Malaysia, mainly due to an increase in international travel and a more positive recognition of the role tourism can play in economic and social development. Over a period of ten years the number of tourists increased from 2.5 m. (1981) to approximately 7.5 m. (1990). During the same decade revenue generated from tourism quadrupled from 600 m. DM\(^1\) to 2.7 billion DM (4.5 billion DM in 1994). Under relatively stable political and social conditions which held minimal threats to foreign tourists, tourism moved up from the sixth position in 1989 to become the third major foreign exchange earner for the country in 1990. It ranked behind manufactures and crude petroleum, but exceeded traditional exports such as rubber, palm oil and tropical timber.

The most important international markets are Malaysia’s neighbours comprising mainly the ASEAN countries. Tourists from Singapore account for the largest market segment, making up approximately two-thirds of all arrivals. This is followed by the other ASEAN nations, Japan, Great Britain, Australia, USA

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\(^1\)Exchange rate at time of study: 1 DM = 1.66 RM = 0.67 US $.
and Germany. The high dependency upon the neighbouring markets results in a relatively low average length of stay as well as relatively low revenue per tourist. On the other hand this makes the Malaysian tourism industry less vulnerable to disruptions in the international tourist traffic (e.g., the Gulf War in 1991 affected Malaysia only slightly in terms of a decrease in tourist arrivals). Another consequence of the dependency on the regional market is the low seasonal variation in tourist arrivals. This is generally positive for tourism development, because occupancy rates are more or less equally distributed throughout the year. Furthermore, permanent employment in the tourism industry can be created.

Continual economic growth and a rising standard of living have significantly increased the desire of Malaysian citizens, in particular the urban middle class, to spend more time on leisure and recreation (WONG 1994). Due to these trends the importance of domestic tourism has increased. This resulted in the establishment of the Ministry of Culture, Arts and Tourism (MOCAT) in 1987, providing an institutional framework for the planning, coordination, regulation and enforcement of tourism. In the following years MOCAT took over from TDC the function of formulating and implementing policies, licensing and the enforcement aspects of the tourism industry. TDC thereafter was expanded and became known as the Malaysian Tourism Promotion Board (MTPB) with a role concentrating only on marketing and promotion. Branch offices were established in the major tourist regions of the Peninsula as well as overseas in Asian countries, Europe and North America.

The major tourist attractions of West Malaysia are the tropical climate, beaches, a unique mixture of different cultures (Malay, Chinese, Indian and that of the indigenous people) and especially the diverse natural attractions, such as virgin rain forests with tremendous biodiversity, mountains, coastlines and islands. Consequently, nature has an important part in the marketing and promotional strategies of the MTPB. It is included in a subtle way within the slogan “Naturally more” used, since 1994, in general images of the country including illustrative material in posters, brochures and specific booklets. Also, the Peninsula fulfills the role of a “local” recreational area for the relatively small city state of Singapore, which explains the high number of Singaporean tourists, some of whom are comparatively wealthy. Many potential tourist attractions are not yet fully developed or accessible. Even though West Malaysia’s transport and communication systems have improved significantly over the last decade, shortcomings still remain in parts of the interior and the east coast.
Visitors have come to Malaysia for many years to see wildlife, forests, beaches and other natural areas. The numbers involved are very difficult to assess due to the shortage of reliable data. The best estimate currently obtainable on the total number of nature tourists or ecotourists can be reached by compiling the visitor statistics for national parks, reserves and other natural areas. This has been done by WWF-Malaysia (Dr. ISABELLE LOUIS, 1994, pers. communication) for the year 1994 covering 18 different areas. Many weaknesses are apparent in compiling the figures in such a way (e.g., not all protected areas are included, overlaps of visitors), however, if this is accepted as a rough but also as a conservative guide, then the total of 481,900 foreign tourists visiting these sites approximates to 6.7 % of Malaysia’s 7.2 m. tourist arrivals in 1994.

The Malaysian tourism policy is part of the national development policy and thus the main goals are the eradication of poverty and the reduction of economic disparities between regions. However, an analysis of the structure and spatial distribution of the tourism industry (hotels and resorts) revealed that tourism is concentrated in a few states or tourist resorts on the prosperous west coast of the Peninsula, particularly in Kuala Lumpur, Penang and Malacca. This concentration has only enhanced the regional differences, so much so that tourism in its present state has not contributed to the desired evening out of regional discrepancies in West Malaysia (OPPERMANN 1992b).

However, recent studies on the travel behaviour of international tourists in West Malaysia indicate that segments exist, made up of, for example, the more active European tourists and individual tourists in general who travel more extensively in the peripheral regions, resulting in a better dispersal of tourist expenditure (OPPERMANN 1992a). As most of the attractive rain forest areas of the Peninsula are located in these peripheral regions, the targeting of this segment and an active promotion of ecotourism in rain forest areas have great potential to contribute more effectively to regional rural development in the future.

The Malaysian government has recognised this trend and has announced in the Sixth Malaysia Plan (1991 - 1995) a revision and a new direction in its long-term view of tourism policies. The National Tourism Policy, which has just been formulated at the time of the preparation of the Sixth Malaysia Plan, has been completed and adopted by the government in 1994. The corner stones of this are an increased emphasis on domestic tourism by expanding the number of low-priced accommodation and other service facilities, the promotion of direct involvement of the local population in the development of tourism, adequate
training, and a further diversification of tourism products and markets. Along these lines the market segment of ecotourism is to receive special attention.

Consequently, for the first time, the government has set aside 16 % of the total development allocation for tourism under the Sixth Malaysia Plan (320 m. DM or 64 m. DM as mean annual allocation) for nature conservation projects and infrastructure development in forest and other protected areas. For the same five year period (1991-1995) the total mean annual revenue from tourism in Malaysia was 3.3 billion DM (MOCAT 1994). If the above mentioned 6.7 % estimate is used to account for numbers and revenue from nature-based tourism, then the revenue from this specialist tourism sector alone was more than three times the total mean annual tourism allocation under the Sixth Malaysia Plan. This alone is more than enough to justify the further development of ecotourism and the allocation of special parks and forest reserves where nature can be enjoyed by tourists (Dr. ISABELLE LOUIS, 1994, personal communication).

2.2 Forestry and nature conservation: state, development and policy issues

The rain forests of Peninsular Malaysia belong to the Malesian floristic region of archipelagic Southeast Asia, which are characterised by an extremely high biodiversity for both flora and fauna. At least 8,000 species of flowering plants have been identified up to now; amongst this figure are at least 2,600 species of trees (KILLMANN 1993). The characteristic rain forest vegetation of the Peninsula is divided into several forest types or ecosystems. Lowland and hill dipterocarp forests are the most characteristic types and form the greater part of this area. The fauna is typically forest-dwelling and also of great richness. There are 203 known species of mammals in the region, among them the elephant (Elephas maximus), tiger (Panthera tigris), tapir (Tapirus indicus), seladang (Bos gaurus hubbacki) and the extremely rare Sumatran rhinoceros (Dicerorhinus sumatrensis). Some 460 species of resident birds are known, and there are many species of amphibians, lizards and snakes, about 250 species of fresh-water fish and an estimated 150,000 kinds of insects and 25,000 species of other invertebrates, including a large number of butterflies (AIKEN and LEIGH 1985; 1992).

In the last 20 years this rain forest habitat has steadily decreased (Table 1). The forests have been heavily denuded especially in the lowland areas of the Penin-
sula by land clearance for monoculture plantation agriculture (oil palm, rubber, cocoa), exploitation of timber resources, and not forgetting shifting cultivation by local farmers. This has already led to a reduction in the amount of timber available for certain markets and also to serious environmental problems such as widespread loss of habitat, soil erosion, river siltation and flooding, and pollution of water courses by effluent from palm oil mills (AIKEN and LEIGH 1985). Today, only 0.5 m. ha of forest is still regarded as primary (Table 1). Of this, a very large percentage is located in the Belum forest in the north, and in the protected forests of Taman Negara in the central region, and Endau-Rompin in the southeast.

Table 1: Development of forested land in Peninsular Malaysia

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<th>Reporting date</th>
<th>1977</th>
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<tbody>
<tr>
<td>Total forested area</td>
<td>7.2 m. ha</td>
<td>6.2 m. ha</td>
<td>5.5 m. ha</td>
</tr>
<tr>
<td>Percentage of land area</td>
<td>54.6</td>
<td>47.0</td>
<td>41.8</td>
</tr>
<tr>
<td>Primary, undisturbed forests</td>
<td>1.82 m. ha</td>
<td>1.14 m. ha</td>
<td>0.5 m. ha</td>
</tr>
</tbody>
</table>

Sources: COLLINS, SAYER and WHITMORE (1991); MTC (1995)

In 1994 the forest area of West Malaysia covers 5.5 m. ha or 41.8 % of the total land area. 4.72 m. ha are classified as Permanent Forest Estate (PFE), divided into Production Forest (2.80 m. ha), Protection Forest (1.90 m. ha) or Amenity Forests (about 28,000 ha). Within the PFE (until 1994) a system of 81 Virgin Jungle Reserves covering 91,000 ha and 74 Forest Recreational Areas covering 5,360 ha have been especially set up for conservation, recreational and educational purposes. About 0.65 m. ha of forests (4.9 % of total land area) is legally protected in national parks, wildlife reserves or wildlife sanctuaries (CHIN 1994; COLLINS, SAYER and WHITMORE 1991).

Policy issues: Forest land is legally owned by the public. Malaysia is a federation of states governed under a constitution. The Constitution prescribes a division of powers between the government at federal and state levels through a system of “lists” which separates those matters which are federal, state or joint (concurrent) responsibilities. Under the Malaysian Constitution (1957), the legislative control over land and forests is held by the state governments. However, the Constitution also provides for the enactment of uniform legislation (Article 76) and national lands policies (Article 91), and thus the federal government could
play a role in coordinating forestry and conservation policies. These are represented in several federal laws, such as the National Forestry Act, National Parks Act, Protection of Wildlife Act and the Environmental Quality Act. However, these laws apply to a state only if they have been adopted by that state’s legislature.

Differing interests and a lack of cooperation between federal and state authorities often make the effective implementation of this legal framework very difficult. While the National Forestry Act has been adopted by all the states in West Malaysia, the National Parks Act has never been enacted by any of the states. Although Taman Negara and Endau-Rompin are believed to be national parks by the general public, they are in fact legally state parks, because they were established under individual state enactments. Furthermore, the Constitution and the Aboriginal Peoples Act guarantee some traditional use rights for the indigenous forest dwellers. If the state wishes to develop forest areas that are and have been inhabited by these people, adequate compensation has to be awarded.

The exploitation of forests for timber and land clearance for agriculture have in the past contributed and still do contribute to the economic development of the country. However, as the rates of logging in the PFE have to be drastically reduced to be sustainable, ecotourism is now regarded as one viable economic alternative of forest use by the policy-makers (see CHIN 1994). Accordingly, the need for a more sustainable and multiple-use management of the PFE is increasingly emphasised (KUMARI 1995). To a certain extent, this objective has already been embodied in the 1993 amendment of the National Forestry Act. Although the federal framework now provides a legal platform for multiple-use management, most of the efforts of the State Forestry Departments are still directed towards the harvesting of timber. The other forest benefits are accorded secondary importance.

Concerned NGOs like MNS and WWF argue that there is no time to waste to conserve what remains of the primary and secondary lowland forests, to extend unlimited security of tenure to the parks and reserves that exist and to create new ones (AIKEN and LEIGH 1985; LEONG et al. 1990). However, as it is generally understood that protected forests do not contribute significantly to the economic development of the country, their conservation has not been a priority of national development objectives. To promote forest conservation, state intervention on the basis of legislative frameworks (e.g., prohibitions or decrees) was and still is the usual procedure.
It is primarily the NGOs (MNS, WWF, AWB) who deserve credit for changing the government’s attitude towards protected forest areas in recent years, leading to a more conservation-oriented set of objectives for forests (KUMARI 1995). This became obvious during the debate to preserve the Endau-Rompin forest in the 1980s. The NGOs were successful in convincing the political decision-makers that ecotourism in particular - as far as its environmental compatibility as well as its socio-economic benefits are concerned - has positive potentials which can be applied to protect the forest resources better. High profile coverage by the Malaysian media, such as “Endau-Rompin has a greater value than the price of its logs” or “… has great potential for nature tourism” (NEW STRAITS TIMES 1987) influenced public opinion at the time, which in turn led to the establishment of Endau-Rompin as a national park in 1993.

Another positive factor for the promotion of ecotourism in Malaysia’s rain forests is the fact that the use of forests for the purposes of leisure and recreation is already emphasised as one of the main objectives in the National Forestry and Conservation Policy of 1978 and is embodied in the respective Acts. The National Parks Act (1980) outlines in Article 4 that, besides the preservation and protection of wild life and plant life, national parks should also be managed to promote the “education, health, aesthetic values and recreation of the people”. Also the National Forestry Act (1984) states that Amenity Forests especially should be established with the aim of conserving “adequate forest areas for recreation, education, research and the protection of the country’s unique flora and fauna”.

3. Results of the case study on Taman Negara

3.1 Features of tourism development

Covering an area of 4,344 sq. km., Taman Negara National Park is the largest legally protected forest area in Peninsular Malaysia. The park was established in 1938-1939 during the colonial period by three separate state enactments of Pahang, Kelantan and Trengganu (Figure 2).

The park is renowned as the most popular nature tourism destination in Malaysia. The preferred tourist activities include jungle trekking, wildlife and bird watching, climbing the canopy walkway, nature photography, boat trips, camping, swimming and fishing. These activities are concentrated on 10% of the park area around the headquarters at Kuala Tahan, and along a corridor reaching as far as Gunung Tahan, the highest mountain in the Peninsula (Figure 2). This mountain is climbed by many park visitors each year.

The administrative responsibility for Taman Negara is distributed between the sultans of the states of Pahang, Kelantan and Terengganu as trustees. The active management of the park is carried out by the Department of Wildlife and National Parks (DWNP) which is a federal government body under the Ministry of Science, Technology and Environment. The different responsibilities are subject to an agreement between the federal and state authorities.

Access: The park headquarters at Kuala Tahan can be reached either by road, river or air. Visitors who choose to go by boat must report at the jetty in Kuala Tembeling, a village 10 km. north of Jerantut. From this point there is a 60 km. boat ride up the Tembeling River to the park headquarters at Kuala Tahan (see Figure 1 and Figure 2). A few tourists also arrive by air or by road which bring them close to Kuala Tahan.

Significant numbers of visitors did not begin to arrive until the 1960s and up until the end of the 1980s the tourism infrastructure was not well developed. However, in connection with new government policies regarding privatisation and with the rapid increase in visitor numbers, the federal ministry responsible decided in 1990 to appoint a private investor to undertake most of the duties of tourism management. Since then the DWNP has only been concerned with the management and conservation measures of the park.
Figure 2: Overview of Taman Negara National Park (1992)
With the investment of more than 9 m. DM, a leading hotel chain of Southeast Asia constructed the Taman Negara Resort (TNR) which can accommodate up to 260 visitors. Camping facilities near the park headquarters and at various sites within the park can cater for another 190 visitors. Furthermore, there are two low budget camps, with a capacity for up to 100 people, one located in a forest recreation area near the park headquarters but outside the park boundaries (Figure 2). This is operated by a local entrepreneur and the necessary licence is awarded by the relevant State Forestry Department. Thus, a total of approximately 550 park visitors can be accommodated per day. Since the park is open for 300 days a year (1990) and taking 3.3 days as the average length of stay (see Table 2) the maximum annual visitor capacity of 48,000 can be deduced, assuming all accommodation is fully booked.

This means that the intended carrying capacity of 35,000 tourists per year for the high density recreation area around Kuala Tahan can already be exceeded. However, the fixing of this limit seems to have been arrived at arbitrarily, without any supporting qualitative or quantitative criteria having been provided. The number of 35,000 officially registered visitors was already reached in 1994, when the park was open all year round for the first time.

### 3.2 Visitor profile and demand structure

The percentage increase in visitor numbers to Taman Negara mirrors that of the whole tourism sector in West Malaysia. Over a period of ten years the number of park visitors increased from 8,200 in 1984 to approximately 30,000 in 1993; this represents an increase of 360 % (Figure 3).

According to DWNP as well as three representative surveys by AHMAD SHUIB et al. (1992), PAU (1993) and KHOO (1995), the profile and demand structure of the park visitors are as follows:

- Registration of the visitors coming to the park in the years 1990-1994 indicates that on average around 45% were Malaysians and 55% were foreign tourists, predominantly from European countries (Germany, Great Britain, France, Switzerland, Netherlands) and North America.

- The majority of the park visitors were of the male sex (58%), young (89% were less than 40 years old), university educated (71%) and earned a relatively high income. Around one-quarter of the visitors were students from
school or university. There was a significant income differential between foreigners and Malaysians on the one hand, and between people with employment and students (“low budget travelers”) on the other.

**Figure 3: Registered visitors of Taman Negara National Park (1984-1994)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>5000</td>
</tr>
<tr>
<td>1985</td>
<td>10000</td>
</tr>
<tr>
<td>1986</td>
<td>15000</td>
</tr>
<tr>
<td>1987</td>
<td>20000</td>
</tr>
<tr>
<td>1988</td>
<td>25000</td>
</tr>
<tr>
<td>1989</td>
<td>30000</td>
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<tr>
<td>1990</td>
<td>35000</td>
</tr>
<tr>
<td>1991</td>
<td>40000</td>
</tr>
<tr>
<td>1992</td>
<td>45000</td>
</tr>
<tr>
<td>1993</td>
<td>50000</td>
</tr>
<tr>
<td>1994</td>
<td>55000</td>
</tr>
</tbody>
</table>

Source: Department of Wildlife and National Parks, Peninsular Malaysia (1994)

- Reasons for a park visit were: see and experience rain forest (45%), for a holiday (16%), get new experience (10%), see wildlife (8%), recreation and adventure (6%), relaxation and sightseeing (8%) and to enjoy the camping life (3%). The last two reasons as well as “for a holiday” were expressed more by Malaysians than by foreign tourists.

- Visitors carried out a variety of activities, with 76% taking part in jungle trekking, 57% in bird watching, 53% in swimming, 49% in caving, 39% in visiting indigenous forest dwellers, 24% in botany, 19% in mountain climbing and 2% in fishing.

- 38% of the park visitors were from pre-arranged package tours originating in Kuala Lumpur whereas 62% were individual tourists. 17% traveled alone, 52% were accompanied by one other person (spouse, friend); the larger groups were usually made up of local students taking part in some nature education programmes arranged by either their school or the DWNP.
• To reach the jetty at Kuala Tembeling, 47% of tourists took a tour bus, 41% chose the more economical public transportation facilities such as public bus, train and taxi. Although the final stage of the journey is relatively time consuming, more than two-thirds of the tourists expressed satisfaction with the boat trip to the park headquarters, because of the interesting forest landscape *en route*.

• For almost all foreign tourists the visit to Taman Negara was part of a longer round trip to Malaysia and/or Southeast Asia. In contrast, for 82% of the Malaysian visitors the park was the only destination during their holiday. Two-thirds of the Malaysians had visited the park on more than one occasion.

• No definite seasonality could be observed. The monthly visitor numbers were relatively even. However, during the Malaysian school holidays (May - July) more domestic tourists were recorded, whereas in the months of January to April there were more foreign tourists.

• Length of stay in the park predominantly ranged from 2 to 7 days. The average was 3.3 days, whereas Malaysians tended to stay for a shorter period than this and foreigners a longer period.

• 80% of the visitors chose accommodation at the Taman Negara Resort, 16% selected budget accommodation (local camps) and 4% preferred to camp. Two-thirds frequented the resort’s restaurants, the rest chose to eat at local food stalls or to prepare their own food on the cooking facilities provided in the camp sites.

The results of these surveys in Taman Negara more or less confirm the findings of the few surveys documented in the literature regarding socio-demography and travel behaviour of nature tourists (e.g., ZIFFER 1989; BOO 1990). This is true with respect to their economic potential as well as in terms of the possibility of influencing their environmental awareness and behaviour. The openness of nature tourists to ecologically justified regulatory measures and their readiness to inform themselves, to accept higher entrance and user fees as well as to get to know the socio-cultural reality of the developing countries seems to be relatively high (see e.g., BMZ 1993a, p. 207). Though BOO notes that caution should be paid to concrete figures, the tendency is clear that, qualitatively, nature/rain forest tourism is a high value form of travel. These findings have important implications for future marketing strategies.
3.3 Tourism impacts at the national level

3.3.1 Socio-economic impacts

According to a calculation by INTERNATIONAL RESOURCES GROUP (1992) regarding ecotours from Europe or North America to several developing countries, only 30 to 35% of total travel costs remain in the destination country. Most of the other two-thirds is absorbed by international airlines and tour operators. From the third which is spent in the destination countries, again a major part of this remains in the capital cities and the well established tourist resorts. Only a very small proportion is channeled to the target area and in particular the target groups. These are the local population and the forest and park authorities concerned. The author of this study found a similar percentage of travel cost distribution when he questioned a number of international tourists in Taman Negara as well as some German tour operators.

The attractiveness of Taman Negara and its broad coverage in the travel brochures of both national and international tour operators have drawn more tourists to Malaysia, and have thus increased the foreign exchange earnings of the country. Furthermore, according to a survey on behalf of the MOCAT (1994), Taman Negara - as well as other tourist destinations - indirectly contributes to the promotion of domestic tourism. This means that Malaysians, by choosing to visit the park rather than to travel abroad, ensure that the country’s economy is sustained.

Also, an interest on the part of the national and international tour operators and tourism enterprises in the preservation of Taman Negara as a tourism resource can be noted. However, only a few of the small, nature tour operators show an active readiness to adopt environmentally and socially sound practices, in the sense that they follow the regulations of the park, support conservation efforts through donations and show respect for the traditional culture of the indigenous forest dwellers (Batek Negrito). Large tourism suppliers, like the operators of Taman Negara Resort and Kuala Lumpur-based tour operators, make little attempt at such self-regulation (YONG, personal communication 1994).

Data from the 1980s indicate that the park had long been run as a service with overall returns not exceeding 25% of the total direct management cost (DWNP 1987). This situation did not significantly improve after the privatisation of the tourist facilities in 1990. The concession and licencing fees paid by the operators of the Taman Negara Resort to the state and federal treasury still do not cover
the management costs of the park. Of these payments, only the licencing fees are taken by the federal ministry, while the state government of Pahang, as the relevant trustee, is entitled to the concession fees. The DWNP budget has to be allocated additional funds by the federal government to enable the effective management of the park (see Figure 4). Furthermore, the high costs of accommodation and food were and still are beyond the price range of the average Malaysian domestic tourist (MNS 1993).

3.3.2 Environmental impacts

Positive environmental impacts that cannot be measured in monetary terms result from the numerous nature education courses for students and school children provided annually by the DWNP in their interpretation centre at the park headquarters. Such courses are already an integral part of the national curriculum for schools. To support this, WONG (1994), in a study about the level of environmental awareness shown by urban and rural Malaysians, concluded that the younger generation has a more positive attitude towards forests than the older members of the population.

Negative environmental impacts of tourism in Taman Negara occur at the national level and even at the global level in the form of emissions by aircraft and vehicles into the atmosphere. According to ZIFFER (1989), about 95% of all foreign, nature tourists travel by air to the country of destination and also use additional domestic flights or cars/buses to reach their - often remote - target areas. This percentage might also be representative for West Malaysia. This aspect is often overlooked in the discussion on the contribution of ecotourism to protecting tropical rain forests and hence the global climate, as e.g. increasing air traffic through tourism can produce the very opposite effect (see DER SPIEGEL 9/1995, p. 175).

3.4 Tourism impacts at the local level

3.4.1 Socio-economic impacts

The socio-economic impacts of tourism have been assessed by studying tourist expenditure in the park. For this to be done AHMAD SHUIB et al. (1992) differentiated between the income from tourist expenditure received by the park ma-
nagement (DWNP) on the one hand, and that received by the tourism sector in the park on the other. In this study the tourism sector was roughly divided into the following sub-sectors: accommodation, transportation, food and restaurants and recreational services (see Table 2). Both DWNP and the tourism sector provide the local population with direct and indirect income and employment opportunities.

3.4.1.1 Direct impacts on income and employment

In 1990 DWNP collected revenue from entrance and user fees and camera and fishing licences, totaling around 67,000 DM (Table 2). However, the full potential revenue from these fees has not been reached due to the comparatively low entrance fee (only 0.60 DM) and the inefficiency in collecting other fees (e.g., compound fines). In the same year the DWNP was allocated 460,000 DM from the federal treasury for the annual personnel and maintenance budget. The personnel budget ensured employment for 87 staff. In 1990 the tourism sector generated a total revenue of 3.92 m. DM (Table 2). In the same year around 780,000 DM was spent on salaries and wages (AHMAD SHUIB et al. 1992, p. 63), maintaining 183 jobs in this sector.

Thus, as a direct impact of park tourism in 1990, 270 jobs (87 + 183) were maintained. However, only 50% of these employees were recruited from the surrounding Malay villages (see Figure 2), including some indigenous forest dwellers (Batek Negrito). As their education and training did not meet the requirements of the tourism sector, they were often employed to do the low-skilled, menial and low-paid work. The other employees were more or less skilled staff from non-local urban areas (AHMAD SHUIB 1992, p. 66). Even though they were now mainly residents of the local vicinity (staff village at Kuala Tahan), they did not regard themselves as such and were seen as “commuters”.

More than 97% of the tourist expenditure for food and lodging was spent in TNR, which dominated the whole tourism sector of the park area. In particular the domestic park visitors complained about the exclusively high prices TNR charged. Only a small portion (3%) went to the enterprises run by the local population such as the camps and food stalls (Table 2). However, this relatively small amount accrued directly to the local population and thus had a comparatively high impact on local income and employment.

Table 2: Tourist Expenditure in Taman Negara in 1990
3. Results - Taman Negara

<table>
<thead>
<tr>
<th>Expenditure by Sector</th>
<th>Number of Visitors</th>
<th>( \text{Expenditure/Person [DM]} )</th>
<th>( \text{Length of Stay} )</th>
<th>Total Expenditure [DM]</th>
<th>% of Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Park Administration (DWNP)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Entrance Fee</td>
<td>18,000</td>
<td>0.60</td>
<td>--</td>
<td>10,800</td>
<td></td>
</tr>
<tr>
<td>- Camera licence</td>
<td>15,480(^{1})</td>
<td>3.00</td>
<td>--</td>
<td>46,440</td>
<td></td>
</tr>
<tr>
<td>- Fishing licence</td>
<td>1,620(^{1})</td>
<td>6.00</td>
<td>--</td>
<td>9,720</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-Total I</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>66,960</strong></td>
<td><strong>1.7</strong></td>
</tr>
<tr>
<td><strong>II. Tourism Sectors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A) Food and Lodging</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Taman Negara Resort</td>
<td>14,400</td>
<td>56.23/day</td>
<td>3.29 days</td>
<td>2,663,953</td>
<td>(97.1)(^{2})</td>
</tr>
<tr>
<td>- Camp Tembling</td>
<td>720</td>
<td>4.01/day</td>
<td>3.00 days</td>
<td>8,661</td>
<td>(0.3)</td>
</tr>
<tr>
<td>- Camp Nusa</td>
<td>2,160</td>
<td>8.45/day</td>
<td>3.25 days</td>
<td>59,319</td>
<td>(2.2)</td>
</tr>
<tr>
<td>- Camping</td>
<td>720</td>
<td>2.81/day</td>
<td>5.50 days</td>
<td>11,128</td>
<td>(0.4)</td>
</tr>
<tr>
<td><strong>B) Transport by boat: Kuala Tembling - Kuala Tahan</strong></td>
<td>18,000</td>
<td>18.00</td>
<td>--</td>
<td>324,000</td>
<td>8.1</td>
</tr>
<tr>
<td><strong>C) Recreational Activities (e.g. boat rental, guides)</strong></td>
<td>9,540</td>
<td>61.05</td>
<td>--</td>
<td>582,417</td>
<td>14.6</td>
</tr>
<tr>
<td><strong>D) Recreation Equipment Rental</strong></td>
<td>3,600</td>
<td>11.17</td>
<td>--</td>
<td>40,212</td>
<td>1.0</td>
</tr>
<tr>
<td>(e.g. fishing route, binoculars)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E) Souvenirs/Handicraft Items</strong></td>
<td>10,080</td>
<td>22.68</td>
<td>--</td>
<td>228,614</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>Sub-Total II</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>3,918,304</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Grand Total (Sub-Total I + II)</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>3,985,264</strong></td>
<td>100 %</td>
</tr>
</tbody>
</table>

\(^{1}\) estimated figures; \(^{2}\) in percent of expenditure for the food and lodging subsector

Source: AHMAD SHUIB et al. (1992); own compilations

3.4.1.2 Multiplier effects: indirect and induced impacts on income and employment

To run their operations, DWNP and the tourism sector have to purchase raw materials, goods and services and thus may cause income effects in other sectors (agriculture, retail, manufacture) of the local economy (indirect impacts). Also the 270 employees of DWNP and the tourism sector need to purchase goods and
services for their daily requirements, and this in turn may stimulate income and employment effects on the local economy (induced impacts).

According to AHMAD SHUIB et al. (1992), in 1990 only 10% (392,000 DM) of total tourist expenditure accrued to locally produced products and services. The analysis of the multiplier effects shows that the indirect and induced income effects in the local economy resulted in a total of approximately 200,000 DM (Figure 4). Assuming the average annual income of a worker in the region was 3,250 DM, this would result in the creation of 62 additional jobs in the local economy, outside the park management and tourism sector. The ratio of 270 direct jobs through tourism to 62 indirect and induced jobs in the local economy meant that for every four jobs in the tourism sector in Taman Negara, approximately only one additional job was created outside the sector.

The main reason for this unsatisfactory ratio is to be found in the high rate of leakage. This is due to the fact that more than 90% of total tourist expenditure (3.92 m. DM) leaked directly or indirectly out of the defined, geographically bounded area (Figure 4). DWNP and the tourism sector had to purchase and import most of their goods and requirements from towns or regions outside the park area (area under investigation), because the demand could not be met by the local economy. The remoteness of the area and the lack of infrastructure had rendered the region less desirable for commercial business undertakings. Owing to this, the 270 park employees disposed of almost 90% of their income, either outside the park area or on imported goods. Supplying the park area from other towns or regions resulted in no substantial economic multiplier effects being created from tourist-related expenditure in Taman Negara.

This result essentially confirms other studies (BRANDON 1993; HEALY 1988; LINDBERG and HUBER 1993) which have shown that the rate of leakage is largely dependent on the economic structure and diversity as well as on the size of the area concerned. Generally speaking, the smaller, the more remote and the less developed the area is, the greater the leakage during each round of spending (MATHIESON and WALL 1982).
Figure 4: Impacts of tourist expenditure on the local economy in Taman Negara

--- represents Taman Negara park boundary

* = Local economy of the Upper Tembeling Region, southern park periphery

M = Multiplier (= 0.4706; for the calculation refer to AHMAD SHUIB et al. 1992, p. 54)

Own concept 1995 (based on data from AHMAD SHUIB et al. 1992)
The revenue generated by tourism in Taman Negara is unequally distributed among the local villagers. The residents of Kuala Tahan (see Figure 2) in particular are the beneficiaries as they live closer to the park headquarters. Of these, around 60% are employed by the tourism sector with an average monthly income of 270 DM. On the other hand, more than 70% of the residents from villages further upstream still generate their income either from agriculture or forest products, which is only 90 DM per month. The latter generally feel that with the proclamation of Taman Negara as a totally protected forest reserve, they have lost an important source to supplement their income. The disparity of income has led to social tensions and jealousy (WAN SABRI et al. 1991, p. 47).

Also, rising prices in boat transport and daily requirements have a negative effect on their means of securing a livelihood. As a further result of their low income, local villagers continue to enter the park for various illegal purposes, such as collecting rattan and other jungle produce as well as poaching wildlife. Therefore, they are a primary target of local law enforcement by the park authorities (DWNP 1987). The prohibition of resource use within the park creates ongoing conflict between the two parties.

Moreover, the Orang Asli (Batek Negrito), of whom around 400 still live in the park boundaries, are negatively affected by tourism development. While their traditional culture is marketed as an attraction by the tourism sector, they benefit very little from it. Although there are many job opportunities in the vicinity of the park headquarters, only a few are employed as cleaners and waste disposal workers by the TNR or as part-time workers with the DWNP in the maintenance of trails and as guides. In addition, their traditional use rights to the park resources are not encouraged, but are tolerated by the park authorities. This again results in conflict between the DWNP and the Batek forest dwellers with regard to the type and amount of resource utilisation in the park available to them.

3.4.2 Environmental impacts

In Taman Negara although tourism has led to manifold ecological damage it is comparatively less serious than the result of current practices in forest exploitation. This observation is probably true as far as the flora is concerned, whereas the impact on the fauna is possibly more serious due to the constant presence of visitors. Additional research in this field is required. In the high density recreation area the resultant degradation is altogether very serious (see also YONG 1990):
• Littering by tourists is apparent, in particular along heavily frequented trails, river banks, at camp sites and other popular places. As the waste consists mostly of non-biodegradable items such as glass bottles, aerosol cans, batteries and plastic bags, the resulting damage is air pollution when burned, and contamination of ground water when buried.

• The disposal of domestic waste water into the Tembeling River and boatmen cleaning their boats with various detergents all lead to the degradation of water quality.

• Sandy soil along the trails and at the heavily used camp sites is compacted by the constant trampling of feet and the shallow tree roots are now exposed. After heavy rainfall trails become muddy, causing hikers to either widen the existing trails or create new sections of unstable trails. This results in soil erosion and destruction of vegetation. Occasionally, park tracks are used for auto-rallies, with serious consequences for the forest ecosystem.

• Erosion also occurs along the river banks as a result of waves created by the many boats coming and going. Furthermore, soil from the banks is washed into the river causing siltation and clouding of the river.

• Due to the constant presence of visitors wild animals retreat into the forest interior and some even begin to show abnormal behavior, as they are attracted to various hides.

• Butterflies are caught as souvenirs, and those species which are most in demand are also the more rare ones e.g., Rajah Brooke’s Birdwing (*Trogonoptera brookiana albescens*). Another souvenir in demand is the quartz crystal from the summit of Gunung Tahan which is being depleted by climbers of the mountain.

• Fishing is a favourite pastime in Malaysia and many domestic tourists come to the park solely to fish. In the upper reaches of the Tembeling River as well as in some of its tributaries, certain fish species, crabs and shrimps are no longer found due to over-fishing. Consequently, the DWNP has imposed a bag fishing limit of two fish, but this is not enforced due to the lack of adequate control measures.
3. Results - Taman Negara

3.5 Conclusions

The reasons for the negative socio-economic and ecological impacts of tourism in Taman Negara, especially at the local level, are primarily to be found in the lack of an effective and overall development and management plan. Other factors include inadequate control and monitoring mechanisms, insufficient park staff and conflicting ideas and interests of the parties involved. For example, the TNR promotes their facilities, not the Taman Negara experience and gives only 1.5% of gross takings indirectly to the DWNP and, the Orang Asli and the local residents are not represented on the advisory committee of the park.

Although several proposals have been made for the provision of a detailed development and management plan for the park by the DWNP (1987), the state trustees have failed to take action. This is due to the three states being unable to agree on a joint cross-border planning and coordination strategy. The reason for this lack of cooperation is partly a result of the fact that Pahang, on whose land the visitor activities are concentrated, profits more from tourism in the park than the states of Kelantan and Terengganu.

At the national level, interest in conserving Taman Negara is primarily motivated by the fact that it is the most outstanding protected forest area in Peninsular Malaysia and thus is highly attractive to foreign tourists. High coverage of Taman Negara in international travel brochures is an indication to support this view. This is good for the tourism industry as a whole and also for the foreign exchange earnings of the country, as most tourists will also visit other scenic destinations and features (e.g. the beaches) during their stay in Malaysia.

At the local level, however, the economic impacts are significantly limited by the centralised (usually from the capital or other urban areas) provision of tourists’ requirements, the inadequate education and training of the local population which limit their employment opportunities to unskilled jobs, as well as the insufficient and unequal participatory and distribution structures. While tourism in the park is booming - and has undoubtedly contributed to the local employment situation in the tourism sector - the regional economic interconnections of tourism with other associated upstream and downstream economic sectors, particularly agriculture, have had little effect. Only some fruits, vegetables and occasionally fish and rice are produced and supplied by the local farmers to the tourism sector. Most of the other goods and requirements are imported. As the local farmers are the ones who profit less from park tourism, it is they who enter the park to hunt, fish and collect rattan as a means of securing their livelihood, although this is illegal according to park regulations.
BUTLER (1980) formulates a development model for tourism destinations and describes a sequence of development phases which can be applied to the Taman Negara model (Figure 5). In the **pioneer phase**, hitherto undeveloped areas are discovered by a few individual tourists. The infrastructure facilities are minimal. Development of infrastructure occurs and visitor numbers increase in the **development phase**. The **boom phase** is characterised by mass tourism, large-scale investments and excessive infrastructure. However, sooner or later the social and/or ecological carrying capacity is reached preventing any further development. At least in the intensive use zones of Taman Negara, the ecological carrying capacity arguably has been reached, if one accepts the criteria of visitor congestion and the loss of resources (e.g., fish species, quartz crystals).

**Figure 5: Tourism development phases in Taman Negara National Park**
Depending on the type of intervention, different post-boom phases are possible. If no intervention occurs, tourism declines. If control measures are successful, development can, under certain circumstances, continue, or consolidation can occur either at the level reached or at a lower quantitative level. In Taman Negara the DWNP (1987) has suggested a better distribution of visitor concentration by the proposed opening of new access points in the west and in the northeast of the park area (see Figure 2). Environmental damage caused by tourist activities could have been minimised, if a consensual management plan (including proposals on zoning, carrying capacity, and details of activities allowed within in each zone) had been implemented, at least before the end of the development phase.
4. Results of the case study on Endau-Rompin

4.1 Important preconditions for ecotourism

The results of the case study on Taman Negara show that the positive effects connected with ecotourism have for the most part not arisen. Based on the different forms of tourism outlined in Section 1.2, it can be said that only ordinary, nature tourism is practised, since the measures to ensure environmental and social compatibility have not been implemented yet. Using the example of Taman Negara, one can conclude that in the interest of the environment as well as of the local population ecotourism is therefore only useful and eligible for aid in Endau-Rompin - as in other tropical forest areas - if

- it can be ensured by appropriate distribution mechanisms that the greatest possible share in revenue from ecotourism reaches the local population and the park administrations;
- substantial economic multiplier effects can be achieved through regional and sectoral integration;
- the environmental and social compatibility of tourism activities can be checked and implemented by means of an adapted monitoring and control system;
- tourism suppliers (tour operators, private investors) and tourists accept self-disciplinary guidelines (“code of ethics”) and observe and support regulations for the control of tourism in the protected forest area.

To ensure the realisation of these preconditions and also the eligibility of ecotourism for aid, it is necessary to consider the phase of tourism development that each particular project has reached (refer to Figure 5). For instance, active promotion of development may be appropriate for the pioneer phase especially with regard to the involvement of local communities. In the development phase, the distribution of increased revenues from tourism and local participation are priorities. Also, regulatory and control measures become more crucial. If the boom phase has already been reached, regulatory and control measures are the top priorities.

As tourism development in Endau-Rompin is still in the pioneer phase, to evaluate whether ecotourism can be implemented, first of all the present situation in the park and the socio-economic status of the local population have to be assessed. The most important results from this assessment are outlined in the following sections.
4. Results - Endau Rompin

4.2 Present situation in Endau-Rompin

4.2.1 Location, accessibility and administration of the park

The Endau-Rompin National Park is situated in a 3,200 sq. km. block of lowland rain forest divided by the boundary of the states of Johor and Pahang in the southeast of the Malaysian Peninsula. Up to now, around 2,100 sq. km. has been disturbed through logging, leaving 1,100 sq. km. of virgin forest as a core. The entire forest block is like an “island” surrounded by a “sea” of oil palm plantations except for two narrow “corridors” of different sizes linking it to two adjacent forest areas (PFEs) in the north and south (see Figure 1).

The Johor government has gazetted a total of 48,905 ha, covering most of the core area, as a state national park, while Pahang has set aside 40,197 ha as a reserve for wildlife under the National Land Code legislation. The Pahang state government has also indicated its intention of gazetting the Pahang side as a state national park by a separate state enactment in the near future. (It is expected that the reserve will also achieve the status of a national park by a separate state enactment). When combined, the total area of both parts would create a 89,102 ha bi-state national park of lowland rain forest.

The park area can be approached via laterite roads either from Kahang (destination: Kg. Peta and Kuala Jasin) or from Kula Rompin on the east coast (destination: Kuala Gergul). For details refer to Figure 6B. However, according to several media reports the access from Kahang is more popular. Overall, the infrastructure development is still insufficient. There is neither a regular postal service to the park area nor are there telephone lines which extend that far. The nearest available telephone lines are 16 km. from Kg. Peta at the edge of the oil palm estates.

The administrative responsibility for the Johor part of Endau-Rompin lies with the National Parks Corporation (NPC). This is a quasi-government agency with representatives from the various government sectors (e.g., economic planning, forestry, justice), the MNS and the tourism industry as members. There is also a technical advisory committee comprising members with expertise in various related fields. It should be noted that the affected local population has no representative on either body. On the Pahang side the Forestry Department is (still) in charge. As yet there is no effective collaboration between the two ad-
ministrations; this should be aimed for in order to coordinate future activities better. Both adminstrations have established outposts in Kg. Peta (Johor) and in Kuala Gergul (Pahang), each with two officers on duty.

4.2.2 Settlements and economic use

The Endau-Rompin region is only sparsely inhabited and in the park itself there is no permanent settlement. However, on the periphery (Figure 6A) there are seven Orang Asli villages (kampungs), some of whose residents rely on the park resources to secure a livelihood.

Parts of the park area have already been logged and exploited in the 1970s and 1980s and there was even the option for new logging concessions to be awarded by the states. The last logging activities ceased in 1989 and since then no new concessions have been granted.

Overall, the current use of forest products in the park area is relatively low and only of regional importance. The main users are the residents of the surrounding villages who hunt, fish and collect fruits, medicinal plants, frogs and turtles for subsistence as well as for commercial reasons. Rattan is collected in greater amounts and is sold to traders who come from the surrounding towns. An aquatic aroid (Piptospatha sp.) and seedlings of the fan palm Livistonia endauensis are collected for sale to the aquarium and horticulture trade in Singapore. A major problem is the poaching by outsiders of the Sumatran rhinocerus which is already close to extinction.

Economic use of the park for tourism began with the official opening of Endau-Rompin in October 1993. However, according to estimates made by the MNS (1993), in excess of 5,000 visitors (mainly Malaysian school children and students) had come annually to the park in the preceding years. A few tour operators, some authorised by the NPC, take groups of tourists to the park, although there is only provisional accommodation (semi-permanent camp) available built at Kuala Jasin by the residents from Kg. Peta. On the Pahang side there are only the six four-bed chalets erected by the Forestry Department on the Kinchin River near Kuala Gergul (Figure 6A). In spite of these restrictions, 3,380 visitor permits (77% Malaysians, 14% Singaporeans and 9% other foreigners) were issued by the NPC (Johor) in the period from October 1993 until December 1995. Most visitors camp out in the open, resulting in damage on some sites, caused by erosion and compaction. Waste disposal and diminishing water quality are also
problems. The Johor Tourism Department organised several 4-wheel-drive trips into the park area (MANIAM 1994), further adding to the damage.

### 4.2.3 Socio-economic situation of the local population

As the village of Kg. Peta is located at the end of the most important access route to the park, it is these residents who will be most affected by future development. Therefore, it stands to reason that a socio-economic survey of this village should be included in this study. Some of the main results of this survey, applying PRA, are presented here to give a picture of the situation.

At the time of the survey (March 1994) Kg. Peta had 211 residents divided into 28 households. An extended family typically consists of the father, mother, an average of four children, and sometimes the parents and siblings of the father. The father is the head of the household as well as the main provider, while the mother takes care of home affairs and, when necessary, also assists with rattan collection which is the most time-consuming activity faced by the villagers.

As the village is not linked to the national electricity grid, power comes from a diesel generator. Household water is pumped up from the Endau River into a central tank and then diverted to the individual homes. The village has two small general stores as well as a simple primary school. The older children attend the secondary school 50 km. away in Kahang. As there are no real job opportunities for them outside the village, almost 80% of school leavers return to Kg. Peta. Medical service is provided by a nurse who visits the village once a week. However, the villagers often still rely on their traditional knowledge of medicinal plants.

The main economic activity for the majority of residents in Kg. Peta is the collection of rattan from the park. For 85% of the households, the sale of rattan is their main source of income, contributing to one third of their total income (Table 3). More than half of the working population in the village is engaged in rattan collection. A bundle of rattan, consisting of 100 lengths (1 length = 20 feet) fetches between 10 and 12 DM. On the average a person can earn approximately 50 to 90 DM per month from the sale of rattan. Rattan can be harvested for about eight to nine months in a year. The average household income per year is 1,110 DM (see Table 3).
To supplement their limited cash income, most households tend small gardens in which they grow tapioca, sweet corn and other vegetables. To satisfy their protein demand the villagers fish and hunt pigs, primates and small deer (*kijang*). Some families keep cattle and goats. Their staple food is rice which is bought in Kahang.

**Table 3: Average prices and incomes from forest produce in Kg. Peta(1993)**

<table>
<thead>
<tr>
<th>Forest Resources</th>
<th>Ø Unit Price</th>
<th>Ø Annual income per household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rattan</td>
<td>11 DM per bundle</td>
<td>420 DM</td>
</tr>
<tr>
<td>Fruits (e.g., Durian / Petai)</td>
<td>2 DM per kg.</td>
<td>270 DM</td>
</tr>
<tr>
<td>Gaharu*</td>
<td>6 DM per 100 g.</td>
<td>150 DM</td>
</tr>
<tr>
<td>Frogs</td>
<td>5 DM per kg.</td>
<td>120 DM</td>
</tr>
<tr>
<td>Turtles</td>
<td>7.50 DM per kg.</td>
<td>120 DM</td>
</tr>
<tr>
<td>Fish (Ikan Kelisa)</td>
<td>6 - 7 DM each</td>
<td>30 DM</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1,110 DM</strong></td>
</tr>
</tbody>
</table>

* extraction of a tree used e.g. as incense

An additional source of income for some of the villagers is the provision of tourist services as boatmen, porters and guides. Five out of 28 heads of household interviewed, stated that they could augment their income by providing tourist services. The average daily charge for a guide is 30 DM and for a porter, 15 DM. In particular, during school holidays when more groups of visitors come to the park, those who secure jobs as guides and porters can earn between 90 DM and 240 DM per month. However, this is not a steady source of income and this opportunity only exists for a few villagers. Only two villagers have as yet been employed by the park authorities.

**4.2.4 Use conflicts**

Whenever allocations of valuable forest resources are desired by different user groups, conflicts are inevitable. It is important to recognise the potential “winners” and “losers” among owners and potential users of land and resources targeted for ecotourism development, and be prepared to compensate the losers for giving up activities incompatible with conservation and ecotourism. In Endau-
Rompin the following **groups with conflicting utilisation requirements** have been identified:

- parties with a strong institutional interest in the conservation of the park, such as NPC and in particular nature organisations (MNS, WWF);
- parties with a neutral interest in the conservation of the park, such as the local population and most regional government agencies (e.g., economic planning, land use and tourism);
- parties who are primarily interested in exploitation of the park resources, in particular logging concession holders, the power generation and mining industries, but tour operators and private investors in the tourism industry can also be included in this category.

As the decision to gazette Endau-Rompin as a protected area in the form of a national park has already been made, the parties especially interested in the utilisation of the natural resources of the park (e.g., logging concession holders) have been, at least in legal terms, excluded as potential users. However, this does not mean their efforts to continue operations have ceased. Even after the national park enactment was implemented, **illegal logging** still occurs in the park area, partly due to the lack of effective control and enforcement measures.

In particular, unresolved conflicts regarding use exist between the park authority and the local population on the Johor side. Since the Endau-Rompin area was gazetted as a national park, the conservation objectives and regulations laid down in the enactment also apply to the Orang Asli and must be enforced by the NPC. For example, subject to the provisions of the enactment, the collection of rattan, the hunting of wild animals and the commercial use of any forest resources are forbidden. If the implementation of these restrictions could be guaranteed - but this is not always the case due to insufficient control measures - the local inhabitants would lose up to one-third of their income generated from forest products (see Table 3).

The local villagers claimed that there must be recognition of their traditional use of the forest. Confronted with this situation, the NPC in collaboration with other regional state authorities began to promote the cultivation of cash crops such as coffee, cocoa, rubber, bananas and coconut to compensate for the renunciation of their traditional use rights. However, due to a lack of experience and interest in some cases as well as attack by certain pests, some of these crops failed. Some of these were replaced with bananas. Since financial returns from many of these
crops can only be expected in a few years time, the residents were promised involvement in the various planned tourism activities to further compensate their reduced income. Conflicts and problems resulting from this are analysed in Sections 4.3.2 and 4.3.3.

4.2.5 Status of planning and management objectives

In 1993 the MNS was commissioned by the NPC (Johor) to draw up a development and management plan for the park. The necessary work was supported and partly financed by GTZ. A first draft report was submitted to the NPC in October 1993. This report mainly dealt with an excellent in-depth description of the biophysical resources, potential development options, management strategies and financial assessments. NPC and the appointed consultant from the MNS agreed that the park should be a multi-use park with the focus of future development on the following management objectives:

- to protect and preserve its natural resources, ensuring they remain as close to their original state as possible;
- conserve those species, communities and habitats, ensuring the management they require to survive;
- encourage research of the forest to understand better its workings and its needs for management;
- be an education resource for Malaysian students and the general public; and
- be available for recreation and to support the tourism industry.

Particularly, the last objective, that is the use of the park for recreation and eco-tourism, was recommended in the plan as the main source of financing the other objectives and thus enable the long-term protection of the park.

However, a significant shortcoming in the planning process so far is that no consultation of and participation by the local population, who will be the most affected by future development, have taken place. As LUZ (1993) has already pointed out, “planning activities should have every reason to take not only the biophysical facts of the relevant natural area as their starting point, but also the socio-economic situation of the people on whose backs the planning is to be implemented. Finally, planned development objectives can, as a rule, only be realised in collaboration with those residents living in or adjacent to the area.”
The socio-economic and cultural aspects of the planned ecotourism development are therefore particularly stressed in the steps of analysis and planning outlined in the following section (see also BMZ 1992).

### 4.3 Guiding principles and recommendations for the promotion of ecotourism

To examine whether ecotourism as a management objective is eligible for aid, the author proposes guiding principles - in the sense of individual steps of analysis - , which in the whole can be applied as a methodology for the planning and implementation of ecotourism projects in tropical forest areas (see Table 4).

#### Table 4: Guiding principles for the promotion of ecotourism in rain forests

| 1. | Objectively assess and evaluate the suitability of rain forests for tourism |
| 2. | Identify potential conflicts among the participating parties |
| 3. | Involve the local communities in planning and implementation |
| 4. | Integrate ecotourism into a comprehensive forest management plan |
| 5. | Promote adequate training and further education measures |
| 6. | Integrate ecotourism into regional rural development |
| 7. | Identify suitable vector organisations for ecotourism management |
| 8. | Discover and assess potential sources of finance and revenue |
| 9. | Integrate ecotourism into sectoral development concepts at the national level |

In the following sections each of these nine guiding principles is explained, commented on and discussed in more detail. Each guideline begins with a short description of the situation in Endau-Rompin, followed by recommendations based on the case study which should show clearly how to transfer the guiding principles into concrete action at the local, regional or national level.
First of all, one precondition for the promotion of ecotourism in rain forests is the existence of an attractive tourism potential. In order to be able to assess this, specific and quantifiable criteria are needed. Based on a proposal by WTO/UNEP (1992) a catalogue of criteria has been compiled and grouped into a set of five categories of criteria (see Table 5). As a simple checklist (in the sense of a “rapid appraisal” procedure), it can be applied by land use planners as well as forest and nature conservation authorities as a first basis to decide whether rain forests are suitable for tourism in principle. In the right column of Table 5 the evaluation of this check for suitability applied to the Endau-Rompin case is listed. The results are based on the situation found during field surveys in April 1994.

The first and second categories of criteria in Table 5 need some explanation. **Flagship attractions** of an ecotourism site in rain forests always refer to distinctive features of natural elements which are found in such a site. They best characterise a site or region and are the main reason for tourists to visit that site. In some cases, protected forest areas are set up because they contain very special resources, which at the same time constitute a flagship attraction. For example, the lowland forest and the Sumatra rhinoceros of Endau-Rompin National Park represent both valuable resources and flagship attractions.

**Complementary attractions** refer to natural and sometimes also cultural elements of a specific site or region. However, they do not possess the degree of relevance or singularity which flagship attractions have. By themselves they may not exert sufficient allure to motivate a tourist to visit that specific site. But they should not be neglected, since they provide added tourism values to a site, contributing to an experience of greater richness and variety and inducing a visitor to stay longer in the area, offering opportunities of carrying out additional activities. Furthermore, they may also help to prevent excessive concentrations of visitors in one single place and at the same time by encouraging the distribution of tourists over a number of sites within the area.
### Table 5: Criteria for the suitability of the Endau-Rompin forest for tourism

<table>
<thead>
<tr>
<th>Criteria</th>
<th>End.-Romp.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Flagship attractions</strong> (attractive natural features)</td>
<td></td>
</tr>
<tr>
<td>- manifold landscapes (forest types, lakes/ rivers, mountains)*</td>
<td>+</td>
</tr>
<tr>
<td>- high biodiversity (flora and fauna)*</td>
<td>+</td>
</tr>
<tr>
<td>- existence of large animals</td>
<td>+</td>
</tr>
<tr>
<td>- existence of a biodiverse avifauna</td>
<td>+</td>
</tr>
<tr>
<td>- easily observable animals*</td>
<td>-</td>
</tr>
<tr>
<td>- uniqueness of species and natural elements of the landscape</td>
<td>+</td>
</tr>
<tr>
<td><strong>2. Complementary &amp; support attractions</strong> (natural, cultural and/or</td>
<td></td>
</tr>
<tr>
<td>- opportunity for swimming (waterfalls, rivers, beaches)</td>
<td>+</td>
</tr>
<tr>
<td>- opportunity for sports (e.g., tracking, fishing, kayaking/ rafting)</td>
<td>+</td>
</tr>
<tr>
<td>- indigenous culture (ethnic groups, villages, handicrafts, folklore)</td>
<td>+</td>
</tr>
<tr>
<td>- archaeological and historical sites / features</td>
<td>-</td>
</tr>
<tr>
<td>- visitor centre (exhibitions, museum, films, lectures, library etc)</td>
<td>-</td>
</tr>
<tr>
<td>- accommodation/catering facilities in different price categories*</td>
<td>-</td>
</tr>
<tr>
<td><strong>3. Accessibility and regional infrastructure</strong></td>
<td></td>
</tr>
<tr>
<td>- distance to international airport or major tourism centre</td>
<td>+</td>
</tr>
<tr>
<td>- access (roads, railway / domestic flights)</td>
<td>+</td>
</tr>
<tr>
<td>- communication facilities / medical care</td>
<td>-</td>
</tr>
<tr>
<td>- other interesting natural and/or cultural attractions in vicinity</td>
<td>+</td>
</tr>
<tr>
<td>- interesting landscape en route</td>
<td>-</td>
</tr>
<tr>
<td><strong>4. Climate</strong></td>
<td></td>
</tr>
<tr>
<td>- daily duration of sunshine; “tolerable” temperatures</td>
<td>+</td>
</tr>
<tr>
<td>- amount and distribution of rainfall</td>
<td>+</td>
</tr>
<tr>
<td><strong>5. General political and social frameworks</strong></td>
<td></td>
</tr>
<tr>
<td>- stable political/social structures in the country / region*</td>
<td>+</td>
</tr>
<tr>
<td>- threats to tourists (criminality, transportation)*</td>
<td>+</td>
</tr>
<tr>
<td>- acceptance of tourism by local population*</td>
<td>+</td>
</tr>
</tbody>
</table>

* = minimum criterion for tourism suitability
+ = existing, favourable, high, positive; - = lacking, unfavourable, low, negative

Source: based on WTO/UNEP 1992; own compilations
Support attractions, on the other hand, are constituted by artificial elements that are necessary to provide the visitor with different satisfactions. These include an interpretative visitor centre, accommodation and catering facilities, trails and boating services etc. They give support and service to the visitor, but they are not intended to constitute the main reason for the tourist visiting a specific area. For that reason, as several authors point out (e.g. ANDERSEN 1993; CEBALLOS-LASCURAIN 1993), support attractions should „always be low-key and of a secondary nature“. This differentiates ecotourism from other, more conventional forms of tourism, in which frequently the hotel or resort and the amenities found in it is the main reasons for a tourist to travel there. The Taman Negara Resort serves as an example to avoid (MNS 1993).

It would be out of keeping with the rest of this report, to go into the details of each criterion in Table 5 and its special relevance to Endau-Rompin. A detailed description of the diversity of the physical (geology, climate, water) and biological resources (vegetation, wildlife, habitats) as well as their uniqueness is, for instance, given in Volume 41 of the MALAYAN NATURE JOURNAL (1987). Nevertheless, some aspects that are decisive for the tourism suitability of the park have to be pointed out:

- The chance of sighting easily observable wild animals (e.g., tiger, leopard, Sumatran rhinoceros, elephant, seladang, gibbon) and other fauna and bird species is - in contrast to the open savannah landscapes in Africa - very much reduced due to the very structured forest stands and the natural shyness of the animals. As this criterion is a particularly important one (minimum criterion) for tourism suitability, this deficit therefore has to be compensated by comprehensive nature interpretation programmes (well trained guides in wildlife biology, interpretation trails, establishment of an information centre with exhibitions, demonstrations etc.).

- The lack of archaeological sites and cultural structures limits park interpretation to the natural resources. However, some cultural aspects (handicrafts, folklore, ceremonies of the local population) could be promoted to a certain extent but in harmony with the cultural context of the surrounding Orang Asli villages. For the development of support attractions precondition exist for excellent swimming opportunities (crystal clear rivers, spectacular waterfalls) and several water-based activities (boat trips, white water rafting). The conditions are also suitable for the construction of a canopy walkway or forest suspension railway and with the services of knowledgeable guides.
4.3 Guiding principles and recommendations

- The journey by road is only two hours from Singapore and four hours from Kuala Lumpur. With access via the major international airports of these two cities, Endau-Rompin will become one of the most accessible tropical forest national parks in the world. For the residents of Singapore the park even has the function of a “local recreation area”. In a regional market competing for the same tourists (e.g., national parks in Thailand or Indonesia are located very remote from population centres), this is one advantage West Malaysia has over its neighbours.

- The relatively sparse settlement of the Endau-Rompin area especially provides favourable conditions for ecotourism as disturbances and conflicts potentially can be kept low. Moreover, relatively low visitor numbers is sufficient to compensate the local population. This has important implications on the type and extent of the infrastructure to be developed.

- The daily duration of sunshine, the high temperatures and the amount and distribution of rainfall are important tourism-related criteria for tourists from countries of the northern hemisphere. According to a tourism climate classification by MARR (1982) for the Malaysian Peninsula, Endau-Rompin is located in a very favourable climatic region as the daily duration of sunshine reaches more than 50% of its daily potential for at least ten months of the year, the average amount of rainfall per month is lower than 200 mm, the days per month with rainfall is not more than 15, and the average daily temperature does not fall lower than 24 °C.

Overall, the author concludes that the Endau-Rompin National Park in general offers favourable preconditions for tourism development. Negative evaluation of some criteria outlined in Table 5 explains why this attractive tourism potential could only be used minimally up to now. Responses from tour operators from West Malaysia and Singapore questioned by the author support the explanation that the decisive factor for this is the complete lack of tourism infrastructure in the area.

The recommendations for action are:

- In order to improve access to the park, the old unpaved laterite road from Kg. Kahang, which in particular cannot be used during heavy rainfall, has to be improved to make it an all-weather road (e.g., with a better and more stable blacktop).
4.3 Guiding principles and recommendations

- Construction of a system of internal roads and trails within the park through the upgrading of old logging roads, with bridges and sealed roads for all-weather use. These roads are for service vehicles and to transport visitors.

- Construction of visitor infrastructure adapted to local conditions (e.g., building material, use of solar energy). In particular there is an urgent need for food and lodging facilities, a park headquarters including a visitor information centre, energy and water supply as well as waste disposal facilities.

- In order to minimise environmental damages, no setting up of camp sites should be allowed within the park. It is the “single most damaging activity a visitor can do; it destroys vegetation; it creates a litter problem; it poses a fire risk and encourages vermin” (MNS 1993). From the beginning permanent and fixed lodging facilities which can be more easily controlled and monitored should be erected.

However, while Endau-Rompin generally is suitable for tourism development, for it to meet the demanding requirements of ecotourism outlined in Section 1.2, additional preconditions must be fulfilled. These are analysed by applying the following guidelines and are evaluated with regard to their realisability.

4.3.2 Identification of potential conflicts among the participating parties

Conflicts arising from the allocation of valuable natural resources have already been dealt with in Section 4.2.4. Here, the conflicts arising from the planned tourism development among the different interested parties who are affected by it are discussed.

Ecotourism is a control-intensive task, in which several parties, often with differing interests, are involved. Ecotourism can only develop its many positive effects when all parties involved agree on the essential objectives of forest use, are integrated in the implementation process and/or enjoy advantages from it. Although tourism-related activities in Endau-Rompin are still in their initial phase, there are already indications of various fields of conflict. Some examples derived from the PRA survey in Kg. Peta should outline their range:

Conflicts between the local population and tour operators and/or tourists
4.3 Guiding principles and recommendations

- Tour operators employ members of the Kg. Peta community as tourist guides and porters in the park. However, the guides complain that the tour operators either pay them incorrectly or late and sometimes even not at all for their services. For example, one possible trip is a 14-hour round trip and, as the guides get paid on a daily basis, they are expected to do this trip as one day’s work. The villagers suggest that this trip should be of two days’ duration so that they could earn more money and visitors could obtain more satisfaction through not having to rush and have time to appreciate the attractions. Considering the profit margins of the tour operators, which have been assessed by the author, these complaints are mostly legitimate.

- In their brochures the tour operators seem to exaggerate very much the existing attractions and the current opportunities for tourist activities in the park. The local guides feel that this is bad practice as they are the ones who bear the brunt of tourist dissatisfaction. They believe that it is better to paint a truer picture of the park, leaving less scope for disillusion. The guides do not want visitors to leave spreading unfavourable impressions about the park and themselves.

- As a waste disposal system has not been installed yet, rubbish produced by the park visitors is either buried in the forest or disposed of in the rivers. However, it is often not buried deep enough and with the onset of heavy rain and the flooding of rivers, the rubbish becomes exposed again. Residents have already been injured as a result of careless disposal of tins and bottles. For example, villagers who cut themselves stepping on broken bottles in the river whilst fishing or swimming were unable to work. They question who would pay for their medical care and support their family during the period of invalidity.

Conflicts between the local population and the park authorities (NPC)

- At the end of 1993 contracts for the construction of the first tourist facilities, such as a jetty on the bank of the Endau River close to Kg. Peta and five chalets at Kuala Jasin (see Figure 6A), were put out for tender. The villagers were keen to at least construct the jetty but were unable to submit their own proposal as there was no legal set-up within their community that fulfilled the contractual requirements. As a result, the contracts for the development of these facilities were awarded by the NPC to a contractor from outside the region. Although it would have been possible to impose the employment of
local villagers on this contractor as a condition, this did not happen. Virtually all the labour force was “imported” by the contractor from outside the area.

- The only unpaved laterite access road to Kg. Peta is regularly used by the contractor and his vehicles. These heavy vehicles have not only worsened the condition of the road surface but also caused eroded embankments and collapsing bridges, making the road at times impassable. As the villagers are dependent on the road as their only connection to the “outside world”, they again and again repaired and maintained this road. The community is complaining that it is not they who are damaging the road and causing transport difficulties. However, they have to suffer the consequences and therefore feel that the road should be maintained by the those who damage it, or other suitable arrangements (compensation for maintenance by the villagers) through the NPC should be made.

The examples show that strategies to mitigate conflicts have to be focused first of all on a greater involvement of the local population in ecotourism activities.

4.3.3 Involvement of local communities in planning and implementation

Participation is unquestionably the most critical element linking tourism with conservation. Local residents must clearly perceive the benefits they personally will derive from ecotourism or they simply will not support it. They must be actively involved from the start, with the design, management, and implementation, and they must participate in the determination of how benefits are to be shared (DURST 1994).

As the experiences in Taman Negara show, the success or otherwise of ecotourism in Endau-Rompin depends on whether it can generate sufficient compensations to the population bordering the park area for forgoing their use of it. However, this requires that the local population concerned is actually in a position to participate in, make decisions concerning and exercise adequate control over the intended development options. Therefore, direct participation by the local communities is not only absolutely essential in the sharing of revenue but also in decision-making on the types and extent of tourism development.

Participation in the revenue from ecotourism can, however, also be indirect, in that a certain proportion of the revenue from fees, levies or taxes is channelled to the local communities. In this case it is necessary to reach consensus on a
distribution scheme which satisfies the different target groups. The revenue can be used, for example, to improve the infrastructure (energy and water supply, health care etc.) in the surrounding villages.

The current situation in Endau-Rompin indicates (see Sections 4.2.3 and 4.3.2), that up to now the local population is hardly involved neither directly nor indirectly. From the PRA results it can be concluded that the lack of capital, knowledge and experience, and the lack of business tradition and contacts were perceived as the main reasons for their insufficient involvement in tourism-related activities. Nevertheless, there is still a predominantly positive attitude towards tourism development in the park (Table 6).

Table 6: Kg. Peta residents’* response to questions on entrepreneurial involvement in park tourism

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given the opportunity are you willing to get involved in businesses related to tourism?</td>
<td>71</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Do you think it is easier to generate cash income from tourism activities rather than from traditional activities, such as the collection of rattan or other forest produce?</td>
<td>54</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>If permitted by the NPC, are you prepared to rent part of your house to park visitors?</td>
<td>37</td>
<td>46</td>
<td>17</td>
</tr>
<tr>
<td>Do you agree to tourists purchasing food from your home?</td>
<td>67</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Are you willing to participate in joint ventures with tour operators or other non-local tourism related enterprises?</td>
<td>46</td>
<td>42</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: own survey (*PRA: March / April 1994) (*) N = 24 head of households

Although only a few residents gain profit from tourism services yet most of the villagers are (still) eager to start small tourism-related enterprises as they hope that this is much easier to generate cash income compared to, for instance, the work-intensive and time-consuming collection of rattan.
4.3 Guiding principles and recommendations

It is because of their lack of involvement in the planning process (see Section 4.2.5) and in the management of the park so far, participation of the local communities to further implement ecotourism in Endau-Rompin is now urgently needed. From this evaluation the following recommendations are derived:

• Adequate involvement of the local communities in the forthcoming negotiations and decisions on the future tourism development of the park, for example by granting them a member-seat and/or a right of vote in the NPC administration board as well as in its technical advisory council.

• Increased recruitment of villagers for jobs in the conservation and tourism sectors (e.g., as park ranger, naturalist guide, porter, boatman, cook) to generate new sources of income. To do so, greater readiness on the part of the local communities to support conservation measures can be achieved, inasmuch as the relationship between these earnings and the existence of the protected area is apparent (see BMZ 1994).

• Promotion and legal guarantee of local organisational structures incorporating appropriate decision-making and executive competences (e.g., cooperatives, self-governing bodies), to allow a greater share of economic activities for the villagers (see conflict on construction of the jetty in Section 4.3.2).

• Promotion of the consumption of local products and the use of local crafts and trades in order to further diversify economic activities. Local skills and traditions should be encouraged and integrated into ecotourism programmes to enhance their appeal. This can also contribute to a new regard for traditional cultures and thus raise the self-esteem of the indigenous groups.

• Promotion of joint tourism projects between interested local and/or foreign tour operators and the communities bordering the park area.

• Assurance of compensation through government authorities for forgoing utilisation of park resources (animals, rattan and other plants, minerals etc.) in the mid-term until new utilisation forms can be implemented.

Most of these aspects will be more easily to implement, if it can be ensured that the local population is also involved from the beginning in the planning process to draw up a comprehensive and consensual management plan for the Endau-Rompin National Park.

4.3.4 Integration into a comprehensive forest management plan
The core problem identified in Taman Negara is, that the negative impacts of park tourism mainly resulted from insufficient planning and management. In order to avoid or minimise future management conflicts and negative environmental impacts in Endau-Rompin, the management objective of “ecotourism” therefore has to be integrated from the start into a comprehensive management plan.

The measures required for this can be summarised into four planning steps:

1. Zoning of the park area
2. Environmental impact assessment (EIA)
3. Site and infrastructure planning
4. Control and monitoring measures

4.3.4.1 Zoning

A comprehensive management plan has to allocate different areas for different functions. Thus, first of all, suitable sites for the various management objectives (see Section 4.2.5) have to be identified. Based on an in-depth description of the many sites and resources in Endau-Rompin (MNS 1993), a zoning system is recommended, which concentrates visitation in some areas and thus separates tourism use spatially from the other intended activities in the park (e.g., preservation, conservation and rehabilitation, research). Following the zoning proposals, developed by IUCN (1978; 1994) and by the UNESCO’s Programme on Man and the Biosphere, for the category of protected area known as “national park”, the author regards the following three management zones within and one outside the Endau-Rompin park boundary as appropriate (Figure 6A):

1. A core zone. The forest in this central part of the park is still in pristine condition. No development will occur here and nature will be allowed to continue its course without human interference. Moreover, some locations have a spiritual and religious importance for the indigenous forest dwellers.

2. A conservation management zone. Parts of this area have already been logged in the past and will need to be replanted to resuscitate the land. In this area a high diversity of wildlife habitats has been identified, which has to be protected. Disturbed habitats should be enriched so that they can better support species such as the endangered Sumatran rhinoceros.
3. A **visitor activity zone.** This area is characterised by a mixture of disturbed and undisturbed forest sites. It contains a representative selection of the many park resources such as attractive waterfalls and rivers, alternate-structured forest stands, high species diversity, and mountains with spectacular views. A network of logging roads exists, and sites which are already degraded are suitable to be developed into intensive-use areas for tourism, pathways and trails, visitor accommodation, education and research facilities as well as staff housing and operational facilities.

4. A **buffer zone.** The actual national park area is surrounded by a forested belt under the control of the State Forestry Departments. As part of the PFE (see Section 2.2) it is designated for sustainable timber production. Subsistence activities and uses by the local population should also be allowed here. At the same time it serves as a “buffer” to the adjacent agricultural plantation crops. Furthermore, this zone is also suitable for the development of infrastructure facilities which need much space, such as car parks, shelters and picnic areas or even for the construction of a forest suspension railway. Also visitor activities which cause more disturbance (e.g., motorised boat trips) could be located in this zone. It is probably the most important zone as it should provide the local population with diversified small-scale activities in order to economically support the conservation objectives within the park boundaries.

### 4.3.4.2 Environmental Impact Assessment

Environmental impact assessments (EIA) are essential for the integration of environmental considerations in project planning. EIA is one of the most effective methods for determining whether a project will be sustainable. According to the Malaysian Environmental Quality Act (1985) and its subsequent guidelines on EIA Procedure and Requirements, the “development of tourist or recreational facilities within or adjacent to a national park” is a project that by law requires an EIA to be undertaken first. This has to be carried out for the whole park area and should include appropriate action and **recommendations** on the following topics:
Figure 6: Zoning proposal (A)/ Accessibility of the visitor activity zone (B)
• A comprehensive and detailed analysis of the **limits of ecological pressures** or loads (environmental carrying capacity) with respect to resource consumption, sensitivity to disturbance and potential threats to flora and fauna.

• Promotion of environmentally **sound conduct** on the part of the tourists, tour operators and private investors (e.g., hotel or travel enterprises).

• Opportunities for **participation** and for minimising negative environmental impacts and undesirable socio-cultural consequences for the local population.

• The application of **alternative technologies** adapted to local conditions with regard to environmentally sensitive construction and operation of tourism infrastructure (e.g., power source, water supply, sewage treatment, waste disposal). For example, the relatively high daily duration of sunshine (see Section 4.3.1) favours the utilisation of solar energy (e.g., photovoltaic-technique).

• The **management techniques** required with regard to the control and regulation of visitor numbers and activities (e.g., which areas to visit and when to carry out certain activities) as well as with regard to the potential levels of change in the composition and number of species (flora and fauna). From the beginning only such activities should be promoted which have a direct relationship to the natural resources of the park. The authors’ proposal on which activities might be suitable for the different management zones outlined above is shown in Figure 7.

Besides EIA, there are some other assessment management techniques that can be used to evaluate tourism development projects *prior* to their implementation. These include assessment of the biophysical and social carrying capacity, limits of acceptable change (LAC), visitor impact management (VIM) and visitor activity management process (VAMP). For a detailed description of these techniques refer to GIONGO et al. (1993). However, these techniques can also be ongoing if they are designed so as to incorporate monitoring mechanisms as well (see 4.3.4.4).
4.3 Guiding principles and recommendations

Figure 7: Visitor activities guide for the Endau-Rompin National Park

<table>
<thead>
<tr>
<th>ENDAU-ROMPIN NATIONAL PARK</th>
<th>- Visitor activities -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jungle walks, trekking</td>
<td>X X O O</td>
</tr>
<tr>
<td>Wildlife / bird watching</td>
<td>X Δ O O</td>
</tr>
<tr>
<td>Guided excursions (botany, zoology)</td>
<td>X</td>
</tr>
<tr>
<td>Swimming</td>
<td>X X O O</td>
</tr>
<tr>
<td>Canoeing/ white water rafting</td>
<td>X</td>
</tr>
<tr>
<td>Motorboat trips</td>
<td>X X Δ O</td>
</tr>
<tr>
<td>Mountain biking</td>
<td>X X Δ Δ</td>
</tr>
<tr>
<td>Mountain / rock climbing</td>
<td>X</td>
</tr>
<tr>
<td>Hunting and fishing</td>
<td>X X</td>
</tr>
<tr>
<td>Collecting souvenirs (plants, animals)</td>
<td>X X X X</td>
</tr>
</tbody>
</table>

Key: O Yes X No Δ Permitted where/when stated  
| Permit required | B. Stecker |

4.3.4.3 Site and infrastructure planning

Although site and road/trail infrastructure planning has to be carried out for the entire park area, a detailed plan is especially necessary for the visitor activity zone. Here, in general, intensive-use and extensive-use sites should be distinguished. Because of their natural attractiveness, the existing level of ecological damages and the likelihood of further damages as well as the presence of existing infrastructure (trails, old logging roads, provisional lodging facilities), the following sites are particularly suitable for building development and visitor activities (Figure 6A, B):

- a park headquarters adjacent to the Orang Asli village of Kg. Peta with a visitor information centre, stores, staff quarters, food and lodging facilities;
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- Waterfalls and natural “pools” at **Kuala Jasin**: accommodation centre (chalets), catering facilities, starting point for activities such as swimming, fishing, boat trips, trekking etc.;

- Waterfalls in the area around **Upih Guling** and **Buaya Sangkut**: swimming, restrooms for day visitors;

- **Marong valley**: day walking tours, wildlife and bird watching, construction of a canopy walkway;

- **Kuala Gergul** and the old GTZ-Camp: park headquarters (Pahang); accommodation facilities, fishing and swimming opportunities in the Kinchin River.

Roads and in particular trails are the corridors through which tourists move through the park. The road from Kg. Kahang into the park passes through oil palm estates and heavily disturbed forest of little scenic interest. However, there is the potential to rehabilitate this route and create a far more attractive entrance to the park (see criteria in Table 5). Improvements in this area will also stabilise the soil and reduce erosion and river silting. Existing trails and roads within the park have to be upgraded and new ones built in order to create a road-trail-network between each area of scenic interest.

4.3.4.4 Control and monitoring of impacts

A comprehensive management plan should also outline which management techniques are appropriate to control and monitor tourism infrastructure development and visitor activities in the park. To **control** impacts, GIONGO et al. (1993) distinguish between direct and indirect management practices:

- **direct practices** act directly on visitor behaviour, leaving little choice on the side of the visitor, such as limitation on the amount of use (e.g., limit entry to an area, require reservation, limit party size and/or length of stay, citations/fines), dispersal of use, concentration of use and seasonal limitations of use.

- **indirect practices** attempt to influence the decision factors which lead to visitor behaviour, such as low impact education through the use of signs, brochures, maps, and interpretive services (e.g., guided tours, audio-visual aids).

However limited a protected forest area’s infrastructure or level of visitor management, **monitoring** should keep the pace to see if management is working. In general, two types of impacts should be monitored at regular intervals:
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- **biophysical impacts**, such as water quality, wildlife, erosion of soils and river banks, vegetation changes and site spreading, trail depth and width;

- **social impacts** which (a) affect the visitor experience, such as littering, vandalism, crowding, group size and visitor satisfaction, and (b) impacts imposed by tourists on host communities; good indicators here are the attitudes and perceptions of local people and the damage to their cultural resources.

Some of the best documented and more used processes and techniques to monitor these biophysical and social impacts of tourism in national parks are discussed by GIONGO et al. (1993).

4.3.5 Promotion of adequate training and further education measures

Education and training are necessary for various groups involved in ecotourism management and in the different fields such as:

- park management (e.g., park ranger, forester, park ecologist, engineer, clerk);
- tourist services (e.g., housekeeper, steward, chamber maid, cook, craftsperson);
- nature interpretation, environmental education, communication (e.g., park naturalist, local nature guides, recreation officer, tour operators).

Education and training need be to **problem-oriented** and directed to the specific requirements of each target group. Some examples will explain this general statement:

Providing education and **training to local villagers** in various aspects of ecotourism is perhaps the most promising approach to ensure participation and integration of the local population into the ecotourism sector. The insufficient involvement of the local residents in the tourism sector of Taman Negara (“cleaners and waste disposal workers”), is, for example, also a problem of insufficient job qualifications.

Control and monitoring mechanism with regard to proper park management (e.g., visitor distribution, regulation of do’s and don’ts) can only be effective if park managers and rangers are sufficiently qualified for these tasks. Once the relevant know-how has been attained, these jobs must in addition be attractive in financial and social terms in order to keep trained staff in the area.
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**Nature interpretation** and environmental education not only require special knowledge but also intelligent techniques of communication. For example, in Endau-Rompin the author found **communication** barriers in particular between the local Orang Asli guides and foreign park visitors. These became obvious not only on the level of understanding languages (Orang Asli usually do not speak English, tourists do not understand local dialects) but also on the level of accepting and understanding different cultural backgrounds (see also SEITZ 1989 on “intercultural communication”). Tourist guides from Kg. Peta hardly have any ideas of what expectations a nature-oriented visitor from a European city combines with a visit to the park. What for the local resident is the daily way of life, is for the foreign tourist an “exotic” experience; for the locals a turtle in the first place is an object of hunting and eating whereas for the foreigner it is in the first place an object of conservation and admiration.

Furthermore, the training of local nature guides and forest interpreters must include their sensitization of ecological processes. The **tour operators** must also be integrated into such an information process; for example, by providing their clients with comprehensive information on the ecological and socio-cultural restrictions of the target area before the start of the journey.

### 4.3.6 Integration of tourism into regional rural development

The experiences in Taman Negara have shown that tourism caused only a few economic multiplier effects in the park region. However, this is one of the essential requirements of **ecotourism**. From this it is concluded that revenue from tourism at the local level can only act as a motor for regional development, if at the same time, besides tourism, the development of the economy and the infrastructure is promoted in sectors which are not directly related to tourism such as the regional transportation industry, agriculture, fishing and forestry, handicrafts and souvenirs, and/or the construction, equipment and maintenance sectors.

To ensure **regional economic interconnections** of tourism with such associated upstream and downstream economic sectors, ecotourism-related development measures have to be integrated in various promotion concepts for regional rural development from the beginning. From this demand the following **recommendations** are derived:
• Improvement of cooperation between the park authorities (NPC) and other regional sector authorities such as tourism, primary industries, town and country planning and land development. This concerns, for example, the development and equipment of the region with roads, power and water supply. Also, the internationally well-known tourist resorts at Mersing and Kuala Rompin (see Figures 1 and 6B) on the nearby east coast should be considered and included in the planning process, as these might be additional potential “demand markets” for Endau-Rompin (e.g., day tours of beach tourists of the east coast into the park).

• Adjustment of existing rural development plans in the region to the requirements and demand structure of ecotourism in the park area. This requires in particular a close agreement with concepts and measures planned for the buffer zone, as the responsible management authority for this area is the Forestry Department (see Section 4.3.4).

• Directing the consumption of food towards traditional, locally producable foodstuff through the promotion of agricultural cash crops (e.g., rice, fruits, vegetables, etc.) in the region which could reduce the dependency of the tourism sector on imported foodstuff. To this end it might be helpful to establish cooperatives for the efficient marketing of such products, in so far as it is justified by the tourism potential and demand.

• Placing of orders for the construction and maintenance of tourism infrastructure with companies/enterprises operating in the region (e.g., boat building, road construction, power and water supply, crafts etc.).

• Promotion of the cultivation, processing and use of non-timber forest products, which are traditionally used in the handicrafts and souvenir production sector of the region.

4.3.7 Identification of suitable vector organisations for ecotourism management

Theoretically the following interest groups could be considered as vectors of ecotourism measures in tropical rain forests:

- government departments (conservation and forestry authorities)
- tourism enterprises (private investors)
- Non-government organisations (NGO)
- local village communities

Similar to the situation in Taman Negara it seems that the park authorities in Endau-Rompin (NPC-Johor and Forestry Department Pahang) are asked too much in terms of number of personnel and professional competence in the fields of administration, conservation management as well as the control and regulation of the tourist activities in the park. The strict separation of tasks, as implemented in Taman Negara between the park administration and the private tourism enterprise (TNR), has not improved the situation. On the contrary, privatisation developed a self-dynamic resulting in negative ecological and socio-economic impacts because an institutional isolation took place. Therefore, from the beginning the necessity of establishing a network of relevant interest groups to manage the Endau-Rompin National Park in a concerted fashion should be given greater consideration.

In this sense the concept of a cooperative ecotourism management among the park authorities of Johor and Pahang, the federal DWNP, the MNS, the local village communities and a few private tourist enterprises (nature tour operators, hostel enterprises) presents itself. A division of tasks could be recommended which considers the strengths and interests of each group. A leadership role could fall upon the MNS because this NGO has both personnel and professional know-how in several fields and a high reputation among all the participants, especially the local Orang Asli communities in the region.

The MNS has already signaled its interest in a long-term ecotourism management concession as well as in the undertaking of conservation measures in Endau-Rompin. Furthermore, the MNS has suggested that the park authorities should transfer the responsibilities of conservation management to the professionally more qualified DWNP. In the framework of the proposed cooperative management the following division of tasks/competences can be recommended:

- **MNS**: concession holder, coordination of activities within the visitor activity zone, support for the DWNP regarding conservation and wildlife management, management of the nature/forest interpretation centre, participation in carrying capacity and environmental impact assessments and research studies, implementation of training measures and courses.

- **Park authorities (NPC)**: administration (park control by rangers, boundary guarding), management of the National Park Fund (fee revenues, government
allocations etc.), safeguarding of legal and planning-related framework conditions against other regional and sectoral government agencies.

- **Village communities**: active involvement in the management of tourism facilities (food and lodging), production and marketing of foodstuff and handicrafts, boat transport, guiding, participation in park management by assuming actual conservation responsibilities (as park ranger, game-keeper etc.). Local residents could also be allowed/encouraged „to build accommodation lodges on their land. They could run their own tours, and have their guests come into the park as day visitors“ (MNS 1993, p. 201). However, in this case it must be ensured that professional operation is feasible and financial support to establish infrastructure is available.

- **Private tourism enterprises**: transport of tourists into the park area, management of accommodation and catering facilities in cooperation with local village communities, training of villagers in the fields of lodging and catering management and consulting in marketing and product presentation, guiding services in cooperation with local guides, distribution of information material, marketing.

As far as the active involvement of tourism enterprises is concerned, in particular medium-sized enterprises and tour operators from the region should be considered. Their easily controlled organisational structure provides better preconditions for the promotion of self-disciplinary approaches, in contrast to large-scale and internationally operating tourism enterprises. However, as the ecotourism development of Endau-Rompin has to be considered under regional economic aspects as well, a closer cooperation with the international tourist resorts on the east coast will be necessary anyway (see Section 4.3.6).

### 4.3.8 Assessment of potential sources of finance and revenue

The feasibility of ecotourism projects in rain forests also has to be assessed on whether, besides their ecological objectives, their economic objectives (i.e. **cost recovery** or **profit maximisation**) can be achieved in the middle or long-term. Since the ecological objectives already have priority, cost recovery should be prioritised in Endau-Rompin as the primary economic objective. At least an approximation of the potential costs incurred by tourism (for management, capital
investments in infrastructure) and the anticipated revenue (fees, permits, concessions) should be calculated at the planning stage.

Furthermore, **distribution structures** and mechanisms are required which stipulate what parties (at national, regional and local levels) have to cover what proportion of the costs and receive what proportion of the revenue generated from tourism. Such a distribution scheme (e.g., in the form of “retention schemes” or transfers to communities) is particularly crucial to the forestry and conservation authorities and the population living in or adjacent to the protected area. However, this requires that the park administrations are given not only a greater right of disposal of the taxes generated in the region but also a certain budgetary autonomy. The latter precondition seems to be ensured in the case of Endau-Rompin due to the obligatory establishment of a separate National Park Trust Fund (under the National Parks (Johor) Corporation Enactment 1993).

To establish ecotourism activities in the park, two types of cost have to be considered. These are **fixed costs**, concerned with capital investments in infrastructure development, and **operating costs**. The latter include staff salaries and wages, utilities, maintenance, transport, visitor services etc. In the case of the proposed cooperative management (with MNS as the main concessionaire) initial financial start-up costs are needed to develop the necessary infrastructure building programme (e.g., roads, trails, accommodation and other building development). The amount is dependent on the type and extent of the planned spectrum of visitor activities. According to calculations by the MNS consultants, rebuilding the network of roads and building trails inside the park alone would incur investment costs of approximately 8 m. DM.

These **funds** could come from the following **sources:**

- Public sector grant (allocations from the state and/or ministry in the federal government);
- Overseas aid from international donor agencies (World Bank, ADB, GTZ, KfW as well as conservation organisations in industrialised countries);
- Private sector (e.g., sponsoring, donations or investments by companies).

From these sources a **financing-mix** could be envisaged, in which the financing of the costly road and trails development could be provided by the federal government (for example, in the Sixth Malaysia Plan the MOCAT has a budget allocation at its disposal, see Section 2.1) and possibly from overseas aid. Additionally, the private tourism industry and the international donor agencies could
be approached for specific projects. For example, in 1994 the Malaysian Airline System announced to support the MNS financially in the construction of a nature interpretation centre in Endau-Rompin within the framework of their marketing and image campaign, “The Green Airline”. Financial aid by international donor agencies could further be made available in the form of interest-free setting-up credits and credit funds to promote small and medium-sized tourism enterprises.

The operational costs for the management of the park and the maintenance of its buildings and infrastructure should be covered in the long-term by revenue from tourism in the park. Among others, the amount of revenue will depend on visitor numbers (which have to be determined through carrying capacity studies) as well as on the type and extent of visitor activities. Table 7 summarises the spectrum of revenue generation through ecotourism.

Table 7: Potential fee categories and charges for ecotourism in forest areas

<table>
<thead>
<tr>
<th>Fee Category / Type</th>
<th>Observations / Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>General entrance fee</td>
<td>for priced access to facilities beyond the entry point of a protected forest area</td>
</tr>
<tr>
<td>User fees</td>
<td>for visitor centre, parking, camp sites, boat use, binoculars, fishing-rods, camping equipment, trail shelters, guide services and emergency rescue</td>
</tr>
<tr>
<td>Concession fees</td>
<td>for enterprises or individuals selling accommodation, food, guide services, transportation, souvenirs and other goods and services</td>
</tr>
<tr>
<td>Royalties/profit shares</td>
<td>on sale of guidebooks, postcards, T-shirts, souvenirs; profit shares from books, films, and photos made at ecotourism sites</td>
</tr>
<tr>
<td>Licences and permits</td>
<td>for tour operators, guides, researchers, mountain climbers and bikers, river rafters, campers, hunters, anglers, wildlife collectors etc.</td>
</tr>
<tr>
<td>Taxes</td>
<td>excise taxes on outdoor and sports equipment, hotel room taxes, airport taxes, vehicle taxes</td>
</tr>
<tr>
<td>Donations</td>
<td>cash or in-kind gifts, e.g., through NGOs involved in conservation, park visitors; sponsoring through firms</td>
</tr>
</tbody>
</table>

The entrance fees in Endau-Rompin should be significantly higher than in Taman Negara, as the willingness-to-pay on the part of nature tourists has been verified in several surveys (see Sections 1.1 and 3.2). These tourists are even more willing to pay fees if they know that their money will be used to manage the nature area
they have come to see rather than be swallowed in the government treasury (BOO 1990). The necessary consideration of affordability could be resolved - as BOO (ed.) and LINDBERG (1991) have demonstrated in several case studies - by establishing different fee categories for domestic and foreign tourists on the one hand and for working persons and students on the other. A general sample decision process for setting tourism fees has been developed by LINDBERG and HUBER (1993, p. 98).

4.3.9 Integration into sectoral development concepts at a national level

Problems connected with ecotourism in rain forests as well as the diversity of the parties involved require supra-sectoral coordination of development strategies and plans at the national level. In order to integrate ecotourism in development concepts at the national level, the following measures are recommended:

- Preparation of a **national ecotourism plan** which supplements the National Tourism Policy (see Section 2.1) as a relevant segment. Besides suitable forest areas this plan should also list other relevant ecotourism sites and attractions such as mountains, caves, waterfalls, rivers or islands. All these sites and attractions should be categorised according to their development phase (e.g., developed, not developed, over-developed) and their suitability as flagship, complementary or support attraction. Additionally, the type and extent of their future use should be determined. Moreover, a **national ecotourism plan** could be combined with the following advantages:

  a) A better distribution of nature-oriented tourists in the country, thus taking pressure off protected forests from visitor congestions.

  b) Tourist activities which are unsuitable in protected areas, such as autorallies, mountain biking or sport hunting, could be moved to areas (e.g., production forests) which are less vulnerable to ecological damages.

  c) Promotion of domestic tourism, thus a more widespread distribution of multiplier effects due to a better diversification of the economic basis in rural areas.

- Improvement of supra-sectoral coordination through the establishment of a **national ecotourism council**, consisting of representatives from all relevant...
4.3 Guiding principles and recommendations

parties (federal and state authorities, the tourism industry, NGOs, local organisations). This council could, for example, also develop guidelines for the distribution and use of revenue generated by ecotourism.

- Promotion of **multiple-use forestry** in managed tropical forests through the integration of ecotourism-related objectives into the national forest policy (refer also to IUCN / ITTO 1992).
- Revision and adaptation of federal **legislation** and state enactments to the needs of ecotourism on the one hand and to the needs of conservation and forestry on the other. This includes, for instance, laws and regulations on land title, traditional land use and/or customary rights, right to enter a forest, capacity of local authorities to acquire and hold rights, permits and licences for tourism suppliers, laws on environmental impact assessment and preconditions for approvals etc..
- Carrying out of market studies and elaboration of **marketing** programmes with reference to ecotourism-related objectives in protected forest, recreational and other target areas.
- Improvement of the **education and training** of relevant personnel (nature guides, tour operators, hotel staff) taking account of objectives relevant to conservation.
- Promotion of environmental education in the general education system through emphasising sustainable resource use in the school curricula as well as through a better cooperation among forest and conservation authorities, NGOs, schools and universities.
- Heightening the attractiveness of forest and conservation-relevant professions by **improving the pay scales** of public sector employment (e.g., protected area management) in order to strengthen the sense of responsibility for conservation objectives and the recognition of the role of forests in society, thus creating interesting career opportunities.

4.4 Conclusions

The guiding principles and recommendations outlined in Section 4.3 have spelt out the necessary measures to implement and control ecotourism in tropical rain forests successfully. The analysis of these measures applied to the Endau-Rompin
5. Prospects

model has highlighted an uncoordinated development process and several deficiencies, which cannot be completely resolved in the short-term. In particular, the MNS is in an awkward position as it feels somewhat accountable for this, since the park authorities expected ecotourism to be an immediate economic alternative to, for example, timber production (see Section 2.2).

Again, it should be stated that the primary objective of national parks is the conservation of the forest ecosystem and the maintenance of its manifold environmental functions (e.g. watershed protection and erosion control, ensurance of biodiversity and ecological process). This goal can be ensured in the long-term through controlled forms of ecotourism as the secondary objective. However, this does not imply that the value-added potential of ecotourism is always going to be very low. In particular, it should ensure sufficient compensation to the local population first, and this seems to be attainable in Endau-Rompin.

However, regarding the high returns expected by the NPC (Johor) from Endau-Rompin through ecotourism, the author is very skeptical of their realisation. For example, the NPC has even thought of awarding the contract for the development of the park to a large-scale private investor. Although the development process would be greatly hastened by massive private investment and the resultant high concession fees, there is the potential risk that any such development would follow a similar course that BUTLER (1980) describes and that has generally taken place in Taman Negara. This is partly due to the high priority placed on short-term gain and the restrictions of current framework conditions (e.g., lack of implementing and controlling operational rules by the park authorities).

Apart from this potential risk, it is generally not so important who - be it local or external private investors - actually develops and markets the tourism products of a rain forest region. Due to the above-mentioned deficiencies and structural conditions, it is possible that external investors might even offer the best preconditions in this context. What is important is that the anticipated positive effects, i.e. improvements in the living standards of the population and ecological compatibility, are actually achieved. Therefore, and in view of the uncoordinated development process in Endau-Rompin up to now, the author concludes that, at this stage of development, to proceed with caution, adapting to local conditions and with a view to participation and cooperation are the chief priorities.

The proposed model of a cooperative management for Endau-Rompin, having special consideration for the local communities, would be suitable (see Section
4.3 Guiding principles and recommendations

4.3.7). Assuming this model is applied, then in the meantime, a form of corporate identity (unique image) could be developed for Endau-Rompin with which the limited capacity of ecotourism can even be deliberately promoted as a special marketing strategy.

It is generally recommended that one should proceed with caution when implementing ecotourism projects in Malaysia. As demonstrated by the impressive example of Costa Rica (see VOGT, 1995), a country which follows environmentally and socially oriented tourism strategies can enhance its positive image enormously. This aspect will even grow in importance in most developing countries as development assistance and cooperation initiated by multi- as well as bilateral agencies are being made increasingly dependent on the positive environmental and social conduct of the potential recipient countries.

5. Prospects: Ecotourism in development assistance and cooperation

Since the Rio Earth Summit, the buzz-word “ecotourism” has increasingly entered not only the programmes of international NGOs, but also those of national and international development organisations. Meanwhile, it is generally recognised that ecotourism is a growth sector with considerable dynamics, with reactive, active and preventative potentials, and which can act as an important linchpin of sectoral and supra-sectoral promotion concepts (ASA 1993; BMZ 1981, 1993a; 1994; WTO/UNEP 1992). Because of this, German development cooperation must also assess what priority ecotourism should receive in its own promotion programmes. Aside from the clear link between ecotourism and conservation (including buffer zone development), it exhibits numerous connections to and overlappings with various fields of development cooperation (see BMZ 1995).

In the context of this report, ecotourism can contribute in particular to the following promotion concepts:

- forest management, through the promotion of multiple-use forestry as well as integrated resource use in production forests (refer to IUCN/ITTO 1992);
• **regional economic development**, through encouraging the desired diversification of the local economy in rural areas;

• **education and vocational training**, through increasing environmental awareness and improving the professional skills of people from all walks of life.

On the other hand, ecotourism can also profit from promotion programmes in other sectors such as in the fields of agriculture, road building and maintenance, power generation, water provision, public health, small enterprise, and gender related issues by improving its framework conditions.

With this in mind, the author concludes that greater importance should be attributed to the **potential of ecotourism** as a tool for the conservation of tropical forests, yet its use **should not be overestimated**. Due to the diversity of the parties involved, conflicting interests, and the generally low possibility of public participation by the local population in the decision-making process, there are also definite limits to the successful control and regulation of ecotourism in many developing countries. From this the author suggests, for the disciplines and sectoral strategies of German development assistance and cooperation, that **ecotourism be included** to a greater extent in existing sectoral strategies. Advancement of ecotourism to a new and independent supra-sectoral strategy (see BMZ 1994) would, on the other hand, lead to expectations which cannot be fulfilled due to the typical problem areas of political-administrative systems in many developing countries.
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