Adequacy of Tourism Transport Infrastructure in Eastern Indonesia

Report

This Report develops further the findings of earlier work by the Bureau of Transport and Communications Economics and the Research and Development Agency of the Indonesian Ministry of Communications on transport in northern Australia and eastern Indonesia. It explores the adequacy of tourism and transport infrastructure in eastern Indonesia to a greater depth of detail than was possible in the earlier work. The focus of the report is on international tourism, because of its importance to eastern Indonesia following the onset of the financial crisis.

bureau of transport economics

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report 99

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ISSN 1440-9569
ISBN 0 642 70420 1

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Published by Bureau of Transport Economics, GPO Box 501, Canberra ACT 2601, Australia.

Orders to AusInfo, GPO Box 84, Canberra, ACT 2601, Australia, telephone (international) +61 2 6295 4861, freecall within Australia 132 447, fax +61 2 6295 4888, World Wide Web http://www.ausinfo.gov.au

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Desktop publishing by Jean Penny
Cover design by Thomas Smith
Printed by Union Offset Printers, Canberra

FOREWORD

Tourism has often been used as a vehicle for encouraging economic development. It is seen as a means of earning foreign exchange and providing employment to the local population. It is not surprising, then, that the Indonesian government has seen tourism as one way of encouraging the development of the eastern provinces of Indonesia.

Eastern Indonesia has tremendous potential for the development of tourism, but this potential cannot be exploited unless the transport system can reliably bring international tourists to the attractions. In 1998 the Bureau of Transport Economics and the Research and Development Agency of the Indonesian Ministry of Communications jointly studied tourism and transport infrastructure in eastern Indonesia.

Neil Gentle led the Australian team, and he was assisted by Sharyn Kierce. Catharina Williams from the Australian National University participated in one of the field trips to eastern Indonesia. The Indonesian team was led by Arif Toha, and was joined later by Dharma Manulang; they were assisted by Zulfikri, Aminuddin Muhamadong, Sugeng Karyanto, Nikson Sitompul and Hari Wiyono.

The assistance of AusAID in providing funding for the project under the Government Sector Linkages Program is gratefully acknowledged. Thanks are also due to Dr Ray Trewin from the Australian National University and Kathy Wong from the Department of Foreign Affairs and Trade for their valuable comments on the draft report. Thank you also to the many people in eastern Indonesia who helped the project team with information and logistical assistance during the field trips.

Greg Harper
Director

Bureau of Transport Economics
Canberra
November 1998

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ABBREVIATIONS

AIDA	Australia Indonesia Development Area
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of South-East Asian Nations
AusAID	Australian Agency for International Development
BIMP-EAGA	Brunei-Indonesia-Malaysia-Philippines-East Asia Growth Area
BITDC	Biak Irian Tourism Development Corporation
BPS	Biro Pusat Statistik (Central Bureau of Statistics)
BTCE	Bureau of Transport and Communications Economics
BTE	Bureau of Transport Economics
CGE	Computable general equilibrium
GDP	Gross domestic product
GNP	Gross national product
GRDP	Gross regional domestic product
IBRA	Indonesia Bank Restructuring Agency
IEDA	Integrated Economic Development Area
IFR	Instrument flight rules
IMF	International Monetary Fund
NTB	Nusa Tenggara Barat
NTT	Nusa Tenggara Timur
PATA	Pacific Asia Travel Association
R&D Agency	Research and Development Agency (Indonesian Ministry of Communications)
Rp	Rupiah
VFR	Visual Flight Rules
WTO	World Trade Organization

EXECUTIVE SUMMARY

This report develops further the findings of earlier work by the Bureau of Transport and Communications Economics (BTCE) (now the Bureau of Transport Economics (BTE)) and the Research and Development Agency of the Indonesian Ministry of Communications (R&D Agency) on transport in northern Australia and eastern Indonesia. It explores the adequacy of tourism and transport infrastructure in eastern Indonesia to a greater depth of detail than was possible in the earlier work. The focus of the report is on international tourism, because of its importance to eastern Indonesia following the onset of the financial crisis.

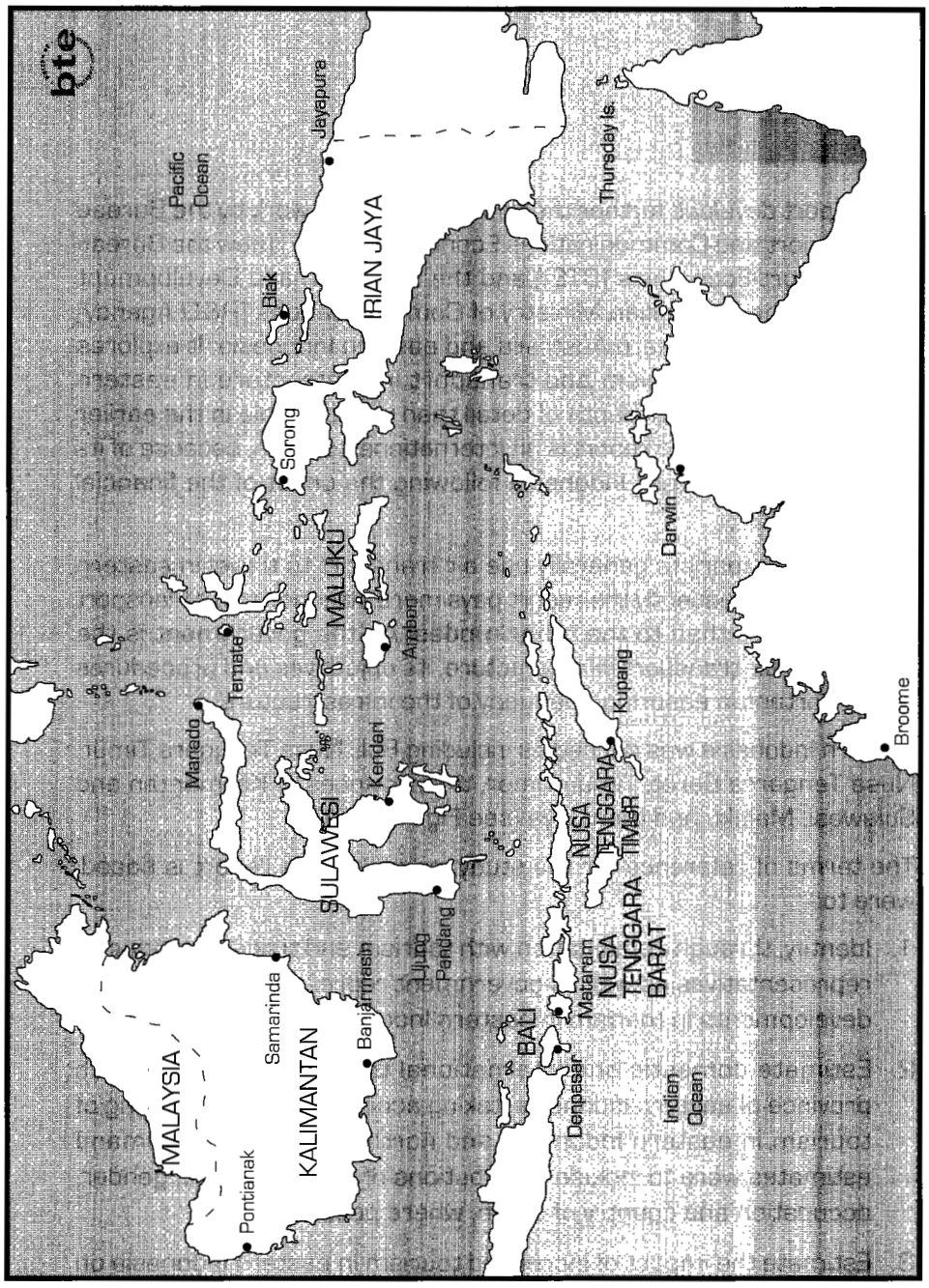
International tourists generally use air transport to travel in eastern Indonesia; consequently the report pays more attention to air transport infrastructure than to the other modes. As the government is the provider of air transport infrastructure, its objectives and procedures are important in ensuring adequacy of the infrastructure.

Eastern Indonesia was defined as including Bali, Nusa Tenggara Timur, Nusa Tengarra Barat, Timur Timor, the provinces of Kalimantan and Sulawesi, Maluku and Irian Jaya (see Figure ES.1).

The terms of reference for the study, on which this report is based, were to:

1. Identify, through consultation with tourism and transport industry representatives as well as government representatives, the likely developments in tourism in eastern Indonesia.
2. Estimate domestic and international tourism demand in each province of eastern Indonesia, taking account of joint marketing of tourism in eastern Indonesia and northern Australia. Demand estimates were to include distributions of visitors by age, gender, occupation and country of origin, where possible.
3. Estimate the impact of increased tourism in eastern Indonesia on tourism demand and tourism transport infrastructure in northern Australia.

FIGURE ES.1 DEFINITION OF EASTERN INDONESIA



4. Compile an inventory of tourism transport infrastructure and transport services available for tourism in eastern Indonesia.
5. Identify transport issues inhibiting the development of tourism in eastern Indonesia such as, but not limited to, deficiencies in the infrastructure, regulations, operations or airfreight capacity.
6. Make recommendations on the future development of tourism transport infrastructure, regulations and operations in eastern Indonesia.

GROWTH OF TOURISM IN INDONESIA

From 1980 until recently, foreign tourist arrivals in Indonesia grew at an average rate exceeding 10 per cent per annum. Many interrelated factors were instrumental in influencing this rapid growth, including currency depreciations, airline deregulation, simplification of entry requirements, expansion of tourism infrastructure (hotels), investment incentives, private sector opportunities and planning to direct the form and location of tourism development.

The tourism industry has played a significant role in Indonesia's economic growth. Bali has been especially successful in developing its tourism potential, and its approach to tourism development has been used as a model for the other provinces of Indonesia. Bali's financial success has encouraged the Indonesian government to promote tourism as a means of fostering development in eastern Indonesia. However, there are questions regarding the sustainability of tourism growth in Bali and the relevance of the Bali model to other provinces in eastern Indonesia.

The idea of using tourism to promote the growth and development of eastern Indonesia is understandable as a means of dispersing tourism benefits more widely to aid the development of the region. A possible risk of this approach is that the distribution of wealth can depend more on the source of the investment and where government revenues go than on where the tourism development is located. That is, the potential benefits of tourism can be diminished by leakages out of the region.

ADVANTAGES OF TOURISM

Tourism is generally seen to contribute to economic growth and development in many developing countries through:

- foreign exchange earnings (improving balance of payments);

- employment creation (due to the labour-intensive nature of the industry);
- infrastructure and technology investment;
- the virtual absence of tariff barriers;
- the abundant natural tourist attractions available at low economic cost;
- its contribution to regional development;
- the generation of both personal and company incomes;
- its contribution to government revenue;
- the use of resources in line with a country's endowment of factor inputs; and
- technology and skills transfer.

DISADVANTAGES OF TOURISM

International tourism can create economic, social, cultural and ecological problems for developing countries, such as the following:

- low level of skills required to enter the industry and low skilled nature of the work may contribute to economic, social and political problems;
- the lack of conservation of many of the initial attractive tourist destinations;
- local economic distortions;
- environmental degradation;
- inflation;
- 'Dutch disease' (whether this occurs depends on many factors, such as the extent of domestic involvement in tourism and ownership, and spending and consumption patterns in the economy)[1];
- enclave development, which increases regional disparities; and

1 'Dutch disease' occcurs when a rise in real wages in the tourism sector results in a contraction of other sectors.

- uncontrolled development, contributing to the destruction of the economic and social fabric as well as the cultural heritage of the local population.

Possible sources of the potential disadvantages, costs or leakages from tourism development include:

- the costs of imported goods and services used by tourists;
- the foreign exchange costs of capital investment in tourist facilities;
- payments abroad in the form of profits and capital remittances by foreign tourist companies; wage remittances by expatriate workers; interest payments on foreign loans; management, royalties and other fees; and payments due to foreign travel agents and tour operators;
- promotion and publicity abroad;
- overseas training of personnel; and
- extra expenditure on imports resulting from consumption by residents who have earned income from the tourist industry and/or whose consumption patterns have altered due to the demonstration effects of tourism.

In addition, tourism employment is said to have a tendency to require a low technical level of expertise; involve high labour mobility; involve unsociable work periods and hours; and result in employee dissatisfaction.

The experience of Bali is of interest as a possible indicator of the benefits that can be expected of tourism development in the rest of eastern Indonesia. The evidence of the net benefits of tourism in Bali is mixed. Perceptions of the negative aspects seem to originate more from outside Bali than from the Balinese. The evidence (see Booth 1990) suggests that the Balinese themselves do not feel that the tourism industry has severely harmed their culture.

Many of the possible disadvantages of tourism can be controlled by good policies. These could include appropriate allocation of property rights to reduce environmental problems and better taxation regimes to encourage a more desirable distribution of the benefits. How the Indonesian government attempts to prevent and deal with the disadvantages and risks associated with tourism development is critical to the future expansion of the industry. The preservation of tourism attractions and the protection of traditional cultures and isolated societies from the negative aspects of modern tourism development

are some of the more important challenges facing provincial and national authorities.

TOURISM AND ECONOMIC DEVELOPMENT

The limited literature that has linked tourism and development has generally viewed the relationship as positive. Nevertheless, there is ongoing academic debate over its advantages and disadvantages in comparison with other industries.

Three stages can be identified in the economic study of tourism since it started in earnest in the 1960s.

- Throughout the 1960s, studies focused purely upon the economic impact of tourism and generally discussed this as being positive.
- Studies that were more sceptical and critical of tourism's social and cultural impact emerged from the mid-1970s.
- From the early 1980s onwards a more cautious and balanced approach to the economic analysis of tourism emerged.

Quantification of the tourism multiplier is a common method for measuring the benefits of tourism. It has been attempted for various countries, but the number of industries involved has made this a very difficult task. The characteristics of a local area and the nature of tourism in it will determine the value of the multiplier. The greater the range of economic activities in an area, the greater the multiplier is likely to be. Costs of tourism development and leakages such as the cost of imports will reduce the size of the multiplier. A benefit–cost analysis framework to analyse the welfare effects of changes in foreign tourism generally provides a more realistic assessment of the impact of tourism on an economy.

The literature suggests that additional foreign tourism expenditure is very likely to produce net benefits for the home country, though these benefits are unlikely to be large in relation to the tourism expenditure. The gains from extra tourism receipts are in many cases similar to the gains from increases in export receipts for other industries. Consequently, the net benefits of tourism cannot be assumed and need to be calculated on a case-by-case basis.

The theory and literature suggest the following conclusions.

- Tourism development should be just one part of an overall development strategy.
- Tourism is only one possible tool for economic development.

- Although tourism is a stimulus to growth in many countries, the potential for other economic sectors to stimulate growth should not be ignored.
- For tourism development to be successful, both transport and tourism infrastructure need to develop in conjunction with each other and reinforce each other.
- The analysis of tourism development should consider not only conventional economic but also environmental, social and cultural impacts.
- Whether the potential social, cultural and environmental disadvantages of foreign tourism are outweighed by its conventional economic benefits remains to be resolved on a case-by-case examination.
- Recognising the heterogeneity of tourism development is important, because different types of tourism development can have vastly diverse impacts and therefore influence economic development in distinct ways.

Indonesia's planned tourism development seems to be consistent with these objectives. However, the practical implementation of these ideals may diverge from the planning ideals.

TRANSPORT INFRASTRUCTURE IMPLICATIONS

The literature suggests that transport plays a key role in eliminating isolation and increasing economic development in countries like Indonesia. Although transport infrastructure and services are not a sufficient condition for economic growth, they are unquestionably important precursors to growth. However, simply building the tourism and transport infrastructure will not necessarily bring tourists and economic development. Investment in other resources, particularly people and marketing, is also essential.

The level of infrastructure development necessary to attract tourism varies with the different types of tourists an area is aiming to attract. There are some types of tourism, mainly adventure and backpacker, that are not likely to require the same level of infrastructure development as the mass tourism market.

Infrastructure development should be justified by both community needs and tourism potential before it is undertaken. Alternatively, there may be some locations where transport infrastructure constructed

for non-tourist purposes, such as mining, could benefit tourism, provided it is in a region with significant tourist attractions.

Basic infrastructure (like sewerage and electricity) should be developed first, then tourism and transport infrastructure should develop concurrently. The opening of Bali Beach Hotel in Sanur in the mid-1960s and the opening of the Ngurah Rai airport to international flights in 1969 are an example of the type of concurrent development of tourism and transport infrastructure required to bring about development and growth. However, the theory suggests that caution should be exercised in attempting to replicate the Bali experience in other locations in eastern Indonesia. Each tourism attraction or area should be evaluated separately, taking account of its individual characteristics.

USE OF SCENARIOS

At the time the BTE and the R&D Agency were considering the future level of tourism in eastern Indonesia, Indonesia was in the midst of its most serious financial and political crisis for 30 years.

Econometric and time-series analysis and other quantitative methods of extrapolating past trends provide little assistance in estimating future tourism demand in these circumstances. Scenarios, however, are frequently used for developing business plans for an uncertain future, and facilitate the investigation of a range of possible factors influencing business outcomes. Scenarios offer a useful technique to explore possible outcomes of the financial crisis in Indonesia and the impacts those outcomes might have on tourist numbers. Because of the large degree of uncertainty in Indonesia, the scenarios cannot accurately predict the future, but are designed to understand better the factors that will influence the future and to indicate key events that can guide planning.

There are several types of scenario that can be developed. The one most appropriate for this study was the 'driving force' scenario. The driving force scenario develops key indicators, or driving forces, that are likely to define the future, and then assigns likely ranges in values of the indicators. The driving forces used in the scenarios are shown in Table ES.1.

Three scenarios were developed:

- optimistic;
- moderate; and
- pessimistic.

TABLE ES.1 DRIVING FORCES USED IN THE SCENARIOS

External[a]	*Internal*[b]
Most important	
Economic conditions in source countries	Expenditure on promotion
Competing destinations	Environmental protection (green)
Response to IMF reforms	Domestic aviation[c]
Exchange rate	Perceptions of personal safety
Inflation rate	
Less important	
Interest rates	Recovery of GDP
Investor confidence	Expenditure on human resource development
Trade liberalisation	Regulatory reform
Air service agreements	Introduction of appropriate technology

Note The order of listing under the headings of 'Most important' and 'Less important' does not imply any ranking.

a. External forces are those deriving from Indonesia's relations with other countries or bodies such as the IMF.

b. Internal forces are those subject to decisions or actions within Indonesia.

c. Not as relevant to Bali as other parts of eastern Indonesia.

Source BTE and R&D Agency analysis.

All of the scenarios suggest that the Indonesian economy will take some years to recover from the current problems. The factors that are expected to have the largest impact on tourist numbers are:

- the exchange rate;
- perceptions of personal safety;
- economic conditions in source countries for international tourists to Indonesia;
- conditions in countries competing with Indonesia for international tourists;
- promotion;
- perceptions of environmental conditions; and
- domestic aviation capacity (for tourist destinations other than Bali).

Applying plausible impacts of the driving forces on international tourist numbers suggests that, after a significant initial decline in numbers, by

2005 tourist numbers will have returned to almost 5 per cent above the long-term trend under the optimistic scenario, and will have fallen far short of the long-term trend by about 60 per cent under the most pessimistic scenario.

AIR PASSENGER FORECASTS

The effect of each scenario on international tourist numbers was estimated as a deviation from the long-term trend. The scenarios were assumed to have the same proportional impact on aviation passengers in eastern Indonesia as they have on international tourist numbers. The assumption is a reasonable one as the reduction in aviation capacity by August 1998 (22 per cent) was similar to the reduction in tourist numbers visiting Indonesia for the first nine months of 1998 (21 per cent).

An initial forecast of air passenger numbers was developed by projecting existing trends to 2005. The estimated deviations from the long-term trends of each of the scenarios was then applied to the projected passenger numbers for 2005.

The R&D Agency had developed an inter-province forecast of air passengers for the year 2005 that was based on an origin–destination survey of air passengers. Additional information on transit passengers, international passengers and passenger numbers at individual airports allowed the R&D Agency forecast to be expanded to an airport-to-airport forecast.

The total number of domestic and international passengers (including transit passengers) estimated to pass through eastern Indonesian airports in 2005, under the optimistic scenario, is around 15.3 million and 7.2 million respectively.

ASSESSMENT OF THE AVIATION INFRASTRUCTURE

All infrastructure has an absolute upper limit to its capacity, at which it becomes incapable of accepting any more demands. Long before this point is reached, the service provided by the infrastructure deteriorates to an unacceptable level. Congestion can occur, delays can be experienced and operating costs increase.

Increasing the capacity of a piece of infrastructure that is assessed as being inadequate does not always require its enlargement or replacement. For some pieces of infrastructure, more appropriate pricing or more efficient operating procedures can result in improved service and may delay the need for new infrastructure investment.

A technical assessment was found to be appropriate for this study. An economic assessment of the infrastructure would have required far more data than was available to the project team. Although the principles of technical assessment remain the same regardless of country, the level of service deemed acceptable can differ. Differences can arise because of the desirability of aligning the technical standards with economic criteria for infrastructure expansion. It is the economic criteria that are likely to differ from country to country.

For some parts of the infrastructure, the need to provide a safe transport system can become the factor that defines technical adequacy. Furthermore, safety criteria in aviation are unlikely to differ to the same degree between nations as economic criteria. For example, safety factors are more likely to define runway capacity than economic criteria.

Airport runway capacities

There are five main factors that define runway capacity:

- separation standards;
- aircraft characteristics;
- runway configuration;
- movement mix; and
- air traffic control strategies.

Australian experience and theoretical analysis suggests that single runways with significantly fewer than 40 movements per hour can be regarded as having ample capacity, provided navigational aids and control facilities are adequate. Runways with anticipated peak-hour movements of about 40 would need closer assessment to determine the appropriate means of accommodating the estimated number of movements to keep aircraft delays under control.

Estimates of peak-hour aircraft movements of selected eastern Indonesian airports were calculated for 2005 under the optimistic scenario. Numbers of movements under this scenario will be greater than under the other scenarios. If one of the other scenarios is a more accurate description of future developments, then the estimated number of movements will occur at some time later than 2005.

The estimated peak-hour aircraft movements of all but one of the eastern Indonesian airports analysed are comfortably below the benchmark of 40 per hour. The one exception is Bali which has an

estimated 39 movements in peak-hour during 2005 under the optimistic scenario. The estimated number of aircraft movements is more likely to overstate than to understate the number. Nevertheless, the estimates suggest that runway capacity at Bali will need to be carefully managed during the coming decade.

There are proposals to extend or rebuild runways at Sorong, Pontianak, Samarinda and Ujung Pandang. In view of the financial crisis, the Ministry of Communications has deferred construction of those projects that have not yet begun. The findings of this study support that decision, as none of the runways at these airports were estimated as likely to experience significant congestion during the study period.

There are also questions about the appropriateness of a new airport at Samarinda, given the existence of an airport with ample capacity at nearby Balikpapan. An improved road link between the two cities could provide good access to Samarinda at possibly lower cost and would benefit the local community more than a new airport would.

Airport terminal capacities

Unlike runway capacity, terminal capacity depends to a large extent on conditions within a country. For example, standards that determine the area of a terminal in Australia are not necessarily appropriate to Indonesian conditions. In general, differences in incomes and labour costs suggest that appropriate terminal areas are smaller in Indonesia than in Australia.

Based on the actual peak-hour domestic passengers and terminal areas for a range of terminals in eastern Indonesia in 1996, the project team developed a relationship between peak-hour passenger flows and minimum terminal areas. On the basis of this relationship, the following terminals were found to face possible congestion in 2005 under the optimistic scenario: Ternate, Ketapang, Mataram, and Banjarmasin. The project team had been informed that the Denpasar existing domestic and international terminals were to be rearranged and that the rearrangement would result in a larger area for the domestic terminal and no change to the international terminal. If the domestic terminal area is not increased, the analysis indicates that it too will face congestion by 2005 under the optimistic scenario.

The analysis focused on total terminal area. It is possible that some terminals could face congestion in specific areas such as check-in areas. The data available did not allow for this degree of disaggregate analysis.

OTHER ISSUES

Survey of travel agents

A survey of Australian travel agents was undertaken in August and September 1998 to explore perceptions of eastern Indonesia and information that was available about the region.

Travel agents considered that the financial cost of travelling to Indonesia was the most important factor their clients took into account when contemplating a trip. Although Indonesia was considered to be mostly safe, personal safety was the second most important factor.

A large proportion of Australian travel agents said they would advise their clients that Indonesia was a safe place to visit or would be neutral on the subject. Generally they were more positive about safety than they believed their clients were.

Travel agents generally ranked airlines in eastern Indonesia as having adequate quality, but airports were considered to be between poor and adequate.

As might be expected, travel agents felt they had good information about Bali. Information about other provinces in eastern Indonesia was generally poor and became poorer as the province became more remote from Bali. A large majority of travel agents were not aware of the Let's Go Indonesia promotion that had commenced in July 1998.

Types of tourists

The type of tourism is important for deciding the type of tourist attractions to develop and the quality of accommodation and transport infrastructure. If eastern Indonesia is expected to attract high-income tourists who look for high-quality accommodation and high-quality attractions, then a transport system consistent with these expectations would be preferable. In contrast, if eastern Indonesia is expected to attract tourists seeking adventure-type holidays, then the quality of the transport system is not so important.

For example, Bali initially focused on the high end of the tourism market, but ultimately developed as a major attraction for seekers of low-cost holidays. The evidence, although somewhat limited, suggests that the type of tourist most likely to be attracted to eastern Indonesia is the traveller seeking relatively low-cost holidays.

The example of Biak

Biak, in the Irian Jaya province, was selected by the Indonesian government as an integrated economic development area, which is a region targeted for rapid economic development. Tourism was seen as one of the promising sectors that could assist the development of the region. Biak had some of the characteristics of Bali in its early days. The development plan called for the construction of six hotels, a marina and other facilities. The Biak Irian Tourism Development Corporation (BITDC) constructed a four-star hotel to initiate the project.

Unfortunately the project has been a failure. No other hotels were built and the BITDC-constructed hotel remains empty most of the time. Lessons from the Biak experience can be of value for the development of tourism in other parts of eastern Indonesia. Reasons suggested for the problems at Biak include:

- the international flights on which the service standards were based ceased just before the hotel opened;
- there were general 'illusions' about the market potential of the project;
- the specific forecasts were too optimistic; and
- the investment was not adapted to the local conditions.

Essentially the development at Biak was based on inadequate market research and has suffered from poor promotion since. Because of the inadequate market research, Biak was designed to attract a type of tourist that normally does not visit the remote regions of eastern Indonesia, and is unlikely to do so in the absence of adequate promotion.

The lessons of Biak can be summarised in the following statements.

- New tourist developments require adequate market research to identify the market segment that will be attracted to the development.
- Tourist facilities need to be adequately promoted to attract tourists.
- Provision of good accommodation is not sufficient by itself to attract tourists—attractions need to be accessible and service providers need to be available for such activities as diving and trekking.
- The more remote the location, the more likely tourists are to be seeking adventure-type holidays and low-cost accommodation.

International aviation

The financial crisis in Indonesia has seen a significant reduction in demand for international aviation services to Jakarta and an increase in demand for services to Bali. Although Australian airlines have been able to switch services between the two destinations, other airlines have not been able to do so because of the aviation agreements in place. Tourism industry organisations had previously called for an 'open skies' policy to allow greater access for foreign airlines. President Habibie announced on 24 September 1998 that there would be greater freedoms for international airlines, but it was later announced that the new freedoms would apply only to charter flights.

One of the difficulties for international airlines wishing to travel to eastern Indonesia (apart from Bali) is that the number of international passengers wishing to travel to the region is generally small, and for most destinations is not sufficient to allow commercially profitable operations.

One possible approach is to allow operators wishing to operate to non-Bali destinations in eastern Indonesia 'beyond rights' not now available to them. Such an enhancement of rights would effectively increase the market for the operator and increase the chance of generating profitable load factors.

Domestic aviation

Domestic aviation has been drastically affected by the financial crisis. There has been a severe reduction in demand as individual incomes and business activities have declined. Many people who previously would have travelled by air have since switched to sea or ferry transport. Domestic airlines suffered a second impact from the financial crisis: their revenue is in rupiah, but many of their larger costs are in US dollars, such as lease payments and spare parts.

As a consequence of these negative effects of the crisis, domestic aviation activity has declined substantially. By August 1998 domestic flights in eastern Indonesia (including flights connecting eastern Indonesia to the western provinces) had been reduced by 32 per cent and passenger capacity by 22 per cent.

It can be expected that it will take some time before the domestic airlines will be in a position to restore services to the level they had provided during 1997. Apart from the difficulty the airlines themselves are experiencing, it will take some considerable time before domestic demand builds up again to previous levels. Because international tourist numbers for most of eastern Indonesia are small compared with

domestic travellers, it is the domestic demand that will determine the ability of the airlines to provide an adequate service.

While the domestic airlines continue to face these extreme difficulties, it is reasonable to expect that only the major centres will continue to receive regular and reliable aviation services. For the tourism industry this means that attractions that lie away from the major centres will not be easily accessible by air—access will generally have to be by road or sea. Such attractions will be difficult to promote to tourists other than the hardened adventure traveller.

Cruise shipping

Eastern Indonesia has considerable potential for cruise shipping. It has many of the natural attractions of other popular cruise shipping areas around the world. Cruise shipping offers an alternative means of attracting travellers to eastern Indonesia during a period when the domestic aviation industry is in trouble. It has the advantage that far less infrastructure is required than for aviation.

Although there is potential for cruising in eastern Indonesia, there are some regulatory factors that inhibit its development. It was suggested to the project team that Indonesian shipping law is vague in some of its aspects and uncertain in its interpretation and enforcement. The vagueness and uncertainty provide opportunities for corruption and this in itself plays a significant role in scaring off major cruise companies from investing in the area. United States cruise shipping companies are especially inhibited by this factor.

Piracy is also a common problem around the Philippines and Indonesia, and may deter cruise operators, although cargo ships are the main targets of this crime.

If a more benign regulatory environment could be developed, it is possible that cruise shipping could be a valuable contributor to the development of tourism in eastern Indonesia.

A possible strategy for tourism development

International tourists, including adventure tourists, expect reliable transport services with a reasonable frequency. A strategy for the development of tourism and transport in eastern Indonesia will need to allow for these expectations.

There are a huge number of possible attractions in eastern Indonesia, but there is little point in developing or promoting them unless they are readily accessible. This suggests that the attractions with the best

chance of success are those closest to the active international access points[2] or attractions easily accessible from the international access points.

A sensible strategy would be to focus on the readily accessible attractions with initial emphasis on those nearest the areas that are already developed. This suggests that Lombok, which is already developing, would be a prime area for further development because of its closeness to Bali. The international gateways at Ujung Pandang and Manado in Sulawesi Selatan and Sulawesi Utara respectively are sensible focus areas for the same reason. The even more significant role of Ujung Pandang as a domestic aviation hub and gateway to eastern Indonesia reinforces this idea.

Ambon could also be an important area to develop because of its major aviation link with Ujung Pandang. However, the more distant attractions from Ambon within Maluku province have difficult aviation links with Ambon, and many of these links have not been very reliable even in more optimistic times.

The possibility of code-sharing or other forms of cooperation between Indonesian domestic airlines and international airlines could be worth investigating. Development of joint operations through code-sharing would have the benefit of increasing the promotional opportunities for eastern Indonesian tourist attractions and increasing passenger numbers for Indonesian domestic airlines. However, Indonesian domestic airlines will need to improve the quality of their operations if code-sharing agreements are to develop.

Some resort operators could provide air services to their own resorts (for example, from Ambon to Banda) to open up areas badly served by existing operators. For this to happen, regulations protecting existing operators would need to be relaxed.

Other parts of eastern Indonesia are less accessible by air, but the use of cruise shipping could work to open up the more remote attractions. The expansion of cruise shipping would require little in the way of additional infrastructure if the adventure-type of tour was the main form of cruising promoted. Expansion of cruise shipping would be more easily developed if the regulatory environment were improved to remove legislative ambiguity and uncertainty.

Another important area is promotion of the region. The BTE survey illustrates that, in Australia at least, eastern Indonesia beyond Bali

2 Some airports such as Biak are technically very suitable for international operations, but attract very few international flights.

receives only limited promotion from travel agents, simply because they have poor information about the area. Promotion strategies should be tied in with the realities of the transport system and the impact of the financial crisis. That is, promotion would be best directed at the more easily accessible attractions and at the travellers most likely to be attracted to them.

In general, the low value of the rupiah provides an excellent opportunity to attract international visitors wishing to enjoy a low-cost holiday in an attractive environment. The continuing demand for travel to Bali is evidence of this opportunity. The challenge is to make the most of the opportunity by concentrating on those attractions that are reliably accessible.

1

INTRODUCTION

BACKGROUND TO THE STUDY

In early 1998 the Bureau of Transport and Communications Economics[3] (BTCE 1998) published the results of its study on economic synergies between northern Australia and eastern Indonesia and the role that transport plays in the development of the two regions. The project was undertaken jointly between the BTCE and the Research and Development Agency of the Indonesian Ministry of Communications (R&D Agency). The report identified tourism as an area of potential synergy between northern Australia and eastern Indonesia.

The present report takes the findings of the first stage further by exploring the adequacy of tourism and transport infrastructure in eastern Indonesia to a greater depth of detail. The second stage was completed in conjunction with the R&D Agency of the Indonesian Ministry of Communications.

The following terms of reference for the second stage of the study were agreed to in late 1997.

1. Identify, through consultation with tourism and transport industry representatives as well as government representatives, likely developments in tourism in eastern Indonesia.
2. Estimate domestic and international tourism demand in each province of eastern Indonesia, taking account of joint marketing of tourism in eastern Indonesia and northern Australia. Demand estimates should also include distributions of visitors by age, gender, occupation and country of origin, where possible.

3 Now the Bureau of Transport Economics (BTE).

3. Estimate the impact of increased tourism in eastern Indonesia on tourism demand and tourism transport infrastructure in northern Australia.

4. Compile an inventory of tourism transport infrastructure and transport services available for tourism in eastern Indonesia.

5. Identify transport issues inhibiting the development of tourism in eastern Indonesia such as, but not limited to, deficiencies in infrastructure, regulations, operations or airfreight capacity.

6. Make recommendations on the future development of tourism transport infrastructure, regulations and operations in eastern Indonesia.

For the purposes of this study, eastern Indonesia is defined as Bali, Nusa Tenggara Timur, Nusa Tenggara Barat, Kalimantan, Sulawesi, Maluku, Timur Timor and Irian Jaya. A map showing the region under consideration is shown in Figure 1.1.

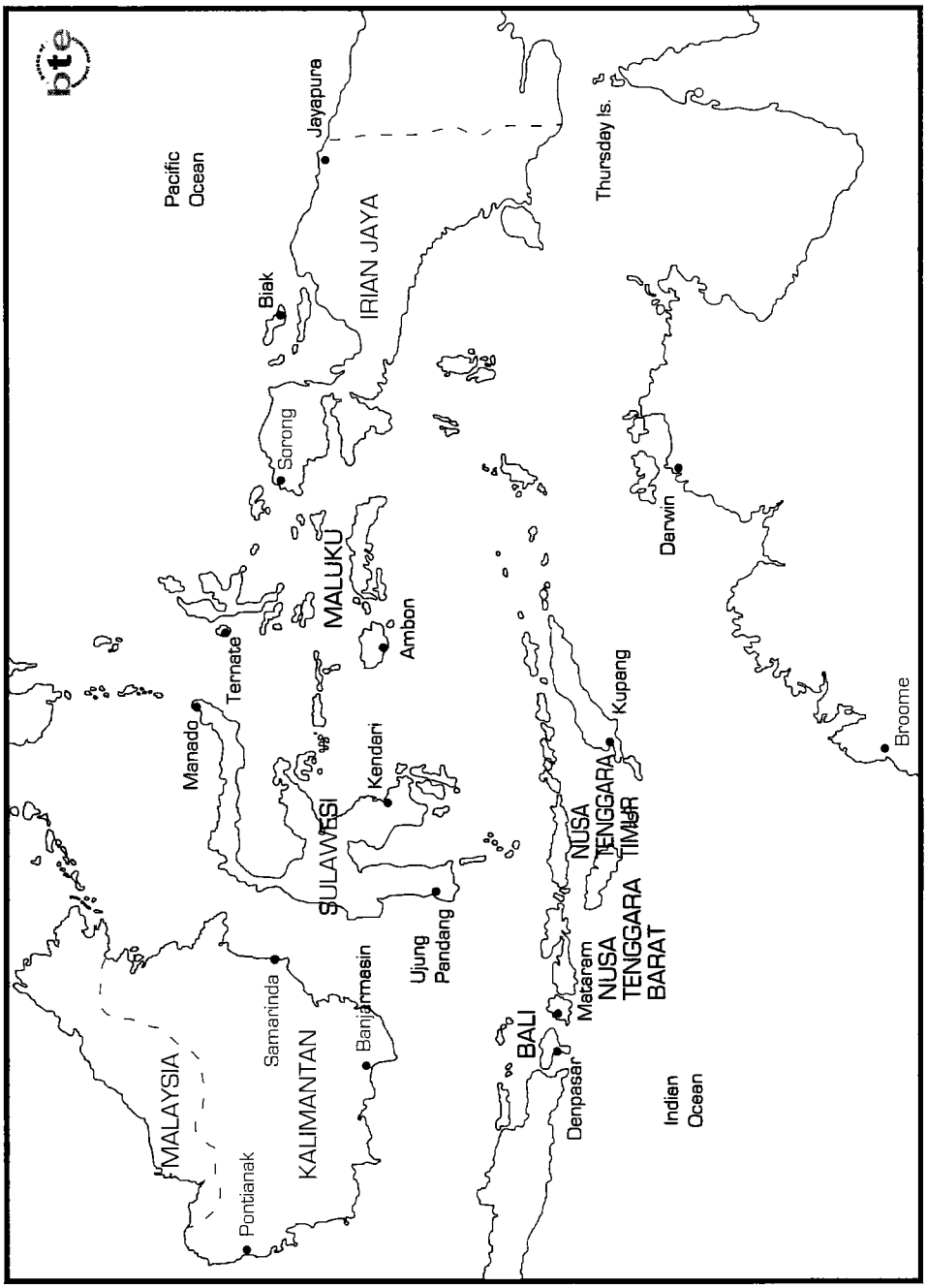
2

Categories of tourism

International visitors travelling to Indonesia can be classified as either business or leisure travellers. In Indonesian tourism data it is difficult to distinguish between the two because many business people enter Indonesia on tourist visas. As a result, the data includes all international visitors as tourists. This is not an important problem as business travel often includes a leisure or tourism travel element. For example, the tourism industry places some emphasis on business tourism products under the acronym MICE (Meetings, Incentives, Conventions and Exhibitions) (Euro Asia Management 1998a, p. 69).

Leisure travel can have an up-market element, much of which is related to business travel. Leisure travel can occur on a mass scale, as experienced in parts of Bali, but is not commonly found in other parts of eastern Indonesia. Leisure travel includes low-cost travellers such as backpackers (who often stay for lengthy periods and spend as much money as other tourists), adventure travellers, cultural travellers and special interest travellers. The classification of tourist attractions in the appendices is relevant to these categories. Although these categories are used in the report, the major focus is on the quality of transport required by the different types of traveller.

FIGURE 1.1 DEFINITION OF EASTERN INDONESIA



Field trips

The project team visited seven provinces in December 1997 to collect both quantitative data and qualitative information for the study. The seven provinces visited were: Bali, Nusa Tenggara Timur, Sulawesi Selatan, Sulawesi Utara, Kalimantan Timur, Maluku and Irian Jaya. The data collected for these provinces are presented in appendices II-VIII. The R&D Agency selected these provinces as a representative sample of eastern Indonesia. They include the major tourist destinations and transport hubs of the region. Meetings were held with relevant government departments at the national, provincial and local level as well as with the private sector. Data for provinces not visited are not as extensive, but appear in appendix IX.

Three members of the Indonesian project team visited Australia in February 1998 to work with the BTE in Canberra on the project and to develop their skills. The Australian team also visited Jakarta in July 1998 to finalise data collection and discuss the report's progress.

Tourism potential

With the exception of Bali, tourism in eastern Indonesia is currently characterised as being underdeveloped. Approximately 1.9 million tourists visited eastern Indonesia in 1996. However, almost 1.15 million or approximately 60 per cent of these tourists went only to Bali. This leaves approximately 770 000 tourists visiting the rest of eastern Indonesia in 1996.

Eastern Indonesia, however, is considered to have significant future potential. The reasons for this are:

- the uniqueness of its culture and traditions (diversity of ethnic groups and tribal societies);
- its unspoilt and large variety of natural attractions (including beaches, marine parks and national parks);
- its historical ties with Europe (many historical sites have been conserved); and
- its location (central to the growing Australasian and East Asian market).

Transport infrastructure in the region is generally regarded as inadequate and of poor quality. This report examines the way this affects the region's capacity to develop its tourism potential. While most of the focus is on air transport, as it is the primary mode bringing

international tourists to the region, we have also examined road and sea transport to some extent.

REPORT OUTLINE

Because of regional development and equity considerations, the Indonesian government has placed a high priority on the development of eastern Indonesia. Chapters 2 and 3 examine the role of tourism in achieving these goals. Chapter 3 provides a rationale for the study by examining the arguments for and against giving tourism priority in economic development.

Chapter 4 develops scenarios for tourism in eastern Indonesia and assesses the impact of these on tourist numbers. The reasons for this approach are also discussed. In Chapter 5, base-case forecasts of air passenger numbers are developed and then modified by the expected impacts of the scenarios.

An assessment of aviation infrastructure in eastern Indonesia is carried out in Chapter 6 and potential bottlenecks are identified.

Chapter 7 discusses issues that the analysis in earlier chapters has highlighted. It also presents the results and analysis of a survey of Australian travel agents' perceptions and knowledge of eastern Indonesia.

Chapter 8 summarises the main findings of the study and concludes by making a number of recommendations.

CONTEXT OF THE STUDY

At the time the BTE and the R&D Agency were considering the future level of tourism in eastern Indonesia, Indonesia was in the midst of its most serious financial and political crisis for 30 years. At the same time, the Indonesian government had to deal also with the effects of a prolonged drought on food availability, and a political crisis, which resulted in a new president for the first time in 32 years. The crisis has raised the importance of tourism, and at the same time made the task of this project more difficult as past trends were no longer a useful guide to the future.

The large short-term and long-term impact of these events has made forecasting tourist demand and transport needs an extremely difficult task. The number of variables involved and the considerable uncertainty associated with them has made this study more difficult to complete than under more stable conditions.

The nature and objectives of the study have changed somewhat as a result of the economic and political upheaval that has taken place in Indonesia. Nevertheless, the resulting report should serve as a useful guide to policy for the Indonesian government and a useful data and information reference for those interested in the region.

The scenario approach used to forecast tourist numbers provides possible paths Indonesia might take in its policy planning. This approach is most useful in highlighting the interrelationships between different causal factors and how these affect the development of tourism and transport as a whole.

As far as possible, the likely developments in tourism in eastern Indonesia have been identified. The study team decided to focus predominantly on international tourism demand because of uncertainty surrounding the definition of tourism used in the domestic data. Domestic tourism data included people visiting friends and relatives and local traders travelling between provinces. Under the Australian definition, traders would not normally have been included in the definition of tourists. In the wake of the crisis, it was also decided that foreign tourism was most important for eastern Indonesia.

Taking account of joint marketing of tourism between eastern Indonesia and northern Australia was frustrated by recent changes in Indonesia's economic and political conditions.

Limitations on the type and detail of the data prevented estimates of tourism demand being broken down by distributions of visitors by age, gender, occupation and country of origin. These types of data were available for the whole of Indonesia but were not collected for eastern Indonesia or at the provincial level. Difficulties in obtaining tourist numbers by province were also encountered.

The unprecedented events that took place in Indonesia in early 1998 meant that analysis of eastern Indonesia dominates the report. The extent to which the impact of increased tourism in eastern Indonesia on tourism demand and tourism transport infrastructure in northern Australia could be explored was less than originally anticipated.

The data appendices contain an inventory of tourism and transport infrastructure and transport services available for tourism in eastern Indonesia. Transport issues inhibiting the development of tourism in eastern Indonesia are discussed throughout the report, but particularly in Chapter 7. Chapter 8 makes a number of recommendations on future development of tourism transport infrastructure, regulations and operations in eastern Indonesia.

2

TOURISM DEVELOPMENT AND POLICY IN INDONESIA

Indonesia has until recently been going through a period of sustained high economic growth. The tourism industry has played a significant role in this growth, as reflected in the progressively higher priority given to it in five-year plans (known as Repelitas). In the 1960s and 1970s the province of Bali was the focus of the government's tourism objectives. Considerable planning and resources were invested in Bali. It is now one of the world's major tourism destinations, attracting visitors from all over the world, particularly Australia.

In 1969 a French consultant team began preparing a 'master plan' for tourism in Bali. This plan, along with the opening of Bali Beach Hotel in Sanur in the mid-1960s and the opening of the Ngurah Rai airport to international flights in 1969, began attempts to develop Bali as a major tourist destination. Bali's approach to tourism development has been used as a model for other provinces of Indonesia. Master plans have become an integral tool in tourism development planning. The success of Bali in the 1980s and 1990s has led the Indonesian government to increase its focus on tourism as a means of achieving development. Presidential decrees encouraging tourism by relaxing regulations are one of the means the government used to achieve this end (eg. Presidential Decree No.15/1983 which allowed visa-free entry from 29 countries).

The recently released 1998 National Tourism Development Master Plan for Indonesia prepared by French consultants identifies two main objectives for tourism development:

- to increase the economic benefits of tourism activity, such as value-added, employment, and foreign currency income; and
- to be one of the main elements of eastern Indonesia's economic growth—considered as a political priority—in order to reach a balanced level of social and economic development all over the country (Euro Asia Management 1998a, p. 12).

The economic benefits of tourism are very difficult to quantify. Typically, accurate data required to estimate the benefits are not available. According to information published by the Department of Tourism, Post and Telecommunications, the two main economic indicators of the tourism sector are foreign currency receipts (valued at US$5.2 billion in 1995) and domestic tourists' expenses (valued at Rp 7.0 trillion in 1991). In 1995 tourism was the fourth-highest sector for currency receipts (after oil and gas, textiles and wood). This led Euro Asia Management to conclude that the tourism sector will become one of the major, if not the major, currency suppliers before 2009 and that its contribution to GDP and employment will increase correspondingly (Euro Asia Management 1998a, pp. 236–237).

The master plan goes on to point out that tourism cannot (apart from rare exceptions) be the only priority of economic development policy. The plan argues that tourism should be considered as a 'crossing' sector, involved in almost all economic activities and acting as an essential support to other sectors, enabling them to develop further (Euro Asia Management 1998a, p. 38).

The 1998 tourism master plan was written before the extent of the economic and political crisis was known. However, there was enough evidence for the authors to conclude that tourism is, and should continue to be, a crucial industry for Indonesia and that, in view of the financial crisis, the effects of which are likely to last for a few years, the need for foreign exchange earnings which international tourism brings is even more critical (Euro Asia Management 1998a, p. 163). However, the master plan, when discussing the crisis, makes assumptions about tourism's benefits that some literature finds disputable (e.g. Forsyth & Dwyer 1991, 1992a, 1992b, 1992c). The plan assumes that tourism will have important positive effects on economic growth and the balance of payments in the wake of the current economic crisis (Euro Asia Management 1998a, p. 240).

Much of the criticism relating to the assumed benefits of tourism stems from the lack of empirical evidence and the abundance of sweeping statements, such as the following found in Indonesia's 1998 master plan.

> Although it is impossible to prove it absolutely, it is obvious that the economic benefits of tourism sector development far overweigh the cost of public investment that goes to it (Euro Asia Management 1998a, p. 237).

TOURISM GROWTH

The average growth of foreign tourist arrivals in Indonesia consistently exceeded 10 per cent per annum during the 1980s (Booth 1990,

p. 46). The data appendices of this report show that many eastern Indonesian provinces continue to experience growth rates in tourist arrivals well above 10 per cent per annum. Until the recent crisis, this rapid growth was the result of many interrelated factors, including currency depreciations, airline deregulation, simplification of entry requirements, expansion of tourism infrastructure (hotels), investment incentives, private sector opportunities and planning to direct the form and location of tourism development (Wall 1997, p. 139). By the end of Repelita VII (2003–04), Indonesia is aiming for 11 million foreign tourists to visit the country.

Booth (1990) estimated that the share of Indonesian GDP generated by foreign tourism was 0.3 per cent in 1984 and 0.7 per cent in 1988. Although this is rather small, she pointed out that the share would have been larger in areas where tourism activity was concentrated. For example, the contribution to Bali's GDP was optimistically estimated to exceed 10 per cent (Booth 1990, p. 52).

According to the Department of Tourism, Post and Telecommunications, gross tourism output in 1997 was Rp 64 840 billion. It estimates that this will increase to Rp 137 166 billion by 2007 (using 1997 constant prices). Tourism's contribution to GDP in 1997 was estimated to be Rp 54 821 billion or approximately 9 per cent of total GDP. This was predicted to increase to over 10 per cent of GDP by 2007. The total number of new job opportunities created by tourism in Indonesia as a percentage of total job opportunities has been estimated by the Department of Tourism, Post and Telecommunications to average more than 7 per cent per annum over the last decade (Department of Tourism, Post & Telecommunications 1997b, pp. 7–11).

Tourism growth in Indonesia is geographically concentrated in the western provinces and Bali. The idea of using tourism to promote the growth and development of eastern Indonesia is understandable as regional development objectives are commonly a major goal of tourism development policies. The aim is to disperse tourism activities more widely so that the potential benefits can aid the development of the region. From the political perspective, the development of eastern Indonesia is important not only from an equity standpoint, but also from the increased need to expand exports, particularly those in the non-oil category (Azis 1992, p. 91).

The idea of spreading the benefits of tourism is contrary to earlier aims of reducing the impact of tourism outside its specific area by encouraging enclave development. When Nusa Dua in Bali was planned and established it was based on the aims of achieving an enclave

development. This was seen as a means of limiting contact between residents and tourists in order to reduce the 'social and cultural' pollution of the latter (Pearce 1989, p.95). There are three basic characteristics of enclave development:

- infrastructure is not intended to benefit the local community directly;
- site location is physically separate from the existing community—trading and social links with an existing community are minimised; and
- facilities are almost exclusively used by foreign tourists (Pearce 1989, p. 95).

The extent to which this type of enclave tourism development can have an impact on the rest of the country depends on the types of government transfer systems in place designed to distribute the benefits and costs.

Although there has been considerable focus on the benefits of tourism, the possible disadvantages should not be ignored.

FACTORS INFLUENCING TOURISM IN INDONESIA

Table 2.1 lists many of the factors shaping international tourism in East Asia and the Pacific.

Many of these factors are examined in Chapter 4, which develops different scenarios for tourism development in Indonesia. Of particular relevance is the considerable shift towards the predominance of intra-regional tourism in Asia and Australasia, and away from the long-haul travel market (Go 1997, p. 14). This highlights the importance of conditions in source countries, particularly Japan, as a factor influencing Indonesian tourism. The increased competition between countries in the region has reinforced the dominant role relative exchange rates play in tourism demand.

There are other factors mentioned in Table 2.1 that are important to tourism growth in Indonesia. Air transport has a large influence on tourism but aviation problems in Indonesia are not so much due to capacity and congestion but to unreliability and quality of service problems. Political instability and natural disasters have been prevalent in Indonesia recently and their impact on tourism has been dramatic. For the first nine months of 1998 total arrivals via Indonesia's 11 most important international gateways declined by 21 per cent compared with the same period in 1997 (PATA Bali Chapter 1998c). On the positive side, Indonesian tourism has many opportunities in the areas

TABLE 2.1 FACTORS SHAPING INTERNATIONAL TOURISM IN EAST ASIA AND THE PACIFIC

Positive factors	*Negative factors*
Intensive and successful marketing and promotional efforts by national tourism organisations of most countries in the region	Insufficient air seat capacity and congestion
Opening of international gateways and increased flight frequencies	Slowdown of the Japanese economy resulting in slight reduction of outbound travel
Modernisation and expansion of tourist facilities and infrastructure	Political instability in some countries of the region
Increase in personal disposable income in the new industrialised countries in the region	Natural disasters in selected tourism destinations
Growth in private sector activity, business and finance	Increased competition among countries of the region
More frequent short duration trips	
Important ethnic ties between countries	

Source Go 1997, p.10.

of promotion and marketing and aviation reform that may open up new tourism areas. The World Trade Organization (WTO) forecast that there would be 100 million tourist arrivals in Asia–Pacific countries in 2000 and 190 million in 2010, four times the number of 1990 (Go 1997, p. 27). Although the impact of the economic crisis in the region may place doubt on these forecasts, there are still many opportunities for Indonesia to increase its share of the tourism market.

During the last two decades, East Asia and the Pacific has been the fastest growing area in the world in terms of GDP growth. The growth of tourism in the area has been very much associated with this rapid economic growth. Indonesia as a whole was predicted to increase tourist arrivals from around 3 million in 1992 to over 10 million in 2005, leaving it ranked seventh out of the top 12 East Asian destinations (Qu & Zhang 1997, p. 42).

There are many factors that influence tourism flows. The main determinants are thought to include disposable income, real exchange rates, airfares and relative prices. Other variables include marketing expenditure, disturbance factors, population, ethnic attraction/cultural ties, distance/travel time, total tourist expenditure, supply factors, trade/business links, tourist appeal, demographic factors and previous

visitors. It appears that few studies of the travel decision-making process have included marketing expenditure as an independent variable (Forsyth & Dwyer 1992b, pp. 3–4). This is probably due to difficulties in obtaining reliable data. There are also problems in separating out generic national promotion and specific regional promotion.

International tourism provides the opportunity to capture many advantages for Indonesia, but there are also disadvantages that must be analysed. Impacts of tourism are very much country-specific. There is no one universal answer as to whether tourism is good or bad for a country. Each country must analyse its situation and compare tourism's net benefits with other economic sectors. The economic theory examining the advantages and disadvantages of tourism is discussed in the next chapter.

3

THEORETICAL ISSUES

The idea that tourism contributes to economic growth and development is not confined to policy makers and governments. It is pervasive throughout both the economic and tourism literature. For many countries, the tourism industry is one of the largest components of GDP. Many Caribbean and East Asian countries rely heavily on tourism and have had considerable success in attracting tourists. Because of this, policy makers, particularly in the developing world, regard tourism as one of the major 'tickets' to economic development.

Not all of the literature shares this optimism about the role of tourism. A more measured approach is suggested in the later literature, in which both the advantages and disadvantages of tourism are considered.

ADVANTAGES OF TOURISM

Tourism is generally seen to contribute to economic growth and development in many developing countries through:

- foreign exchange earnings (improving balance of payments);
- employment creation (due to the labour-intensive nature of the industry);
- infrastructure and technology investment;
- the virtual absence of tariff barriers;
- the abundant natural tourist attractions available at low economic cost;
- its contribution to regional development;
- the generation of both personal and company incomes;
- its contribution to government revenue;

- the use of resources in line with a country's endowment of factor inputs; and
- technology and skills transfer.

There are many variations of this list that could be put forward. Many authors have written extensively on the subject and broad statements about the economic benefits of tourism are frequent in the literature. Vellas and Bécheral (1995), for example, wrote:

> There are few economic sectors which generate as much added value, employment and currency for such a low cost as international tourism. All tourism products and services consumed by foreign visitors are exports that avoid the costs of distribution and transport to other markets. International tourism both provides foreign currency and distributes purchasing power throughout the visited country. Tourism has become the world's most important economic activity (Vellas & Bécheral 1995, p. xxii).

The above quote contains both the economic and regional development goals specified in Indonesia's 1998 National Tourism Development Master Plan.

Based on the advantages of tourism listed above, Modeste (1995, p. 375) noted that the notion is commonly advanced that, in tourism-dependent economies, development could be enhanced if more resources were allocated to the tourism sector. He then tested the hypothesis that expansion of the tourism sector accelerates economic development, using pooled data for four Caribbean countries, and found that economic development was positively affected by growth in the tourism sector for all four countries studied. His results also suggested that the agricultural sector had contracted as the tourism sector expanded (Modeste 1995, p. 383). This point can have implications for tourism in eastern Indonesia. It implies that as tourism develops, primary industries like agriculture decline, providing resources to the growing service sectors.

While the potential benefits of international tourism are attractive, it must be remembered that they are exactly that—potential benefits—and that they are not guaranteed. Much of the literature on tourism gives the impression that the industry has advantages as a contributor to economic development that other industries might not have. Jenkins (1997) points out that in a world of scarce resources the important question is: does the concentration of investment and resources in tourism generate more economic benefits than if a similar amount had been invested elsewhere, for example in agriculture or industry? He goes on to argue that, despite tourism having no claim for advantageous treatment, in developing countries it has received

substantial support from governments (Jenkins 1997, p. 52). The reasons put forward for government support of tourism in addition to the advantages already discussed are:

- that it is historically a growth sector;
- that the major consumers of international tourism are residents of developed countries;
- that 'intermediate technology', where abundant and cheap labour substitutes for scarce and expensive capital, is often an appropriate development policy; and
- that tourism is now part of lifestyles that people will protect even in difficult economic times (Jenkins 1997, pp. 52–54).

Booth (1990) outlined a similar list of tourism's advantages and concluded that it was 'hardly surprising that the Indonesian government, along with many others, is giving a high priority to the development of tourism as an important source of foreign exchange and as a means of creating more jobs' (Booth 1990, pp. 45–46).

The labour-intensive nature of tourism has created direct and indirect employment for an estimated 204 million individuals worldwide, or 'one in every nine workers' (Go 1997, p. 28). Booth (1990) used an input–output model to estimate the employment effects of foreign tourism expenditure. While acknowledging the limitations[4] of the approach, she argued that 'the multiplier effect is quite significant even allowing for leakages of tourist expenditure into imports' (Booth 1990, p. 68). She argued that this type of approach was useful as a broad indication of the kind of impact that expenditure by foreign tourists could have in Indonesia. Booth also pointed out that the role of the tourist sector in employment creation was important not just in quantitative terms but also in the quality of employment provided (Booth 1990, pp. 68–69).

Tourism may constitute a useful tool for regional development because of the potential benefits already discussed. Indonesian government policy sees tourism as a means of redistributing wealth geographically from the richer areas to poorer peripheral areas in the east. However, the geographic redistribution of wealth depends more on where the investment is made and where the government revenues go than on where the tourism operator is located. That is, the greater the reliance on external sources of financial, physical and human capital, the greater the potential for leakages out of the regional area. This also applies to

4 See Stavenuiter (1987), for more detail on the limitations of input–output analysis.

the extent of foreign exchange earnings of tourism in a region (Pearce 1989, pp. 202–203).

Tourism in Indonesia is highly concentrated in a few locations, and there is little evidence that this is changing, in spite of repeated statements and proposals by ministers and senior officials of the need to develop new resorts in Sulawesi, Kalimantan and Irian Jaya.

It is extremely difficult to quantify the proposed advantages of tourism. Many attempts have been made (using, for example, input–output analysis or computable general equilibrium models to calculate multipliers, percentage contribution to GDP, employment, foreign exchange earned etc) but all are subject to considerable criticism. All of these attempts have endeavoured to develop indicators of tourism's success. The large number of industries linked to tourism is the factor that makes quantification of benefits so difficult.

There are other potential advantages of tourism, less often mentioned. Although there are very visible environmental disadvantages of tourism, it is also possible that tourism may actually lead to the preservation of some natural, historic or cultural sites. Forsyth and Dwyer argue that not only is tourism dependent on conservation, it can assist it, particularly as an economic justification for the protection of sites threatened by more destructive forms of land use (Forsyth & Dwyer 1992a, pp. 35–36).

The Indonesian Department of Tourism, Post and Telecommunications (1997b) also noted that the development of tourism industries:

- motivates Indonesian people to preserve their cultural and historical sites; and
- can help create an appreciation of diversity and educate Indonesian people about cultures foreign to them (Department of Tourism, Post & Telecommunications 1997b pp. 12–13, 15).

DISADVANTAGES OF TOURISM

International tourism can create economic, social, cultural and ecological problems for developing countries. It is not necessarily the economic miracle it is often portrayed as being. Disadvantages and risks associated with tourism include:

- economic, social and political problems caused by the low entry-skills threshold;
- the lack of conservation of many of the initial attractive tourist destinations;

- local economic distortions;
- environmental degradation;
- inflation;
- 'Dutch disease' (the rise in real wages in the tourism sector, which results in a contraction of other sectors). Whether Dutch disease occurs depends on many factors, such as the extent of domestic involvement in tourism and ownership, and spending and consumption patterns in the economy;
- enclave development, which increases regional disparities; and
- uncontrolled development, contributing to the destruction of the economic and social fabric as well as the cultural heritage of the local population (Vellas & Bécheral 1995, pp. xxii–xxiii).

Pearce (1989) identifies six possible sources of disadvantage, cost or leakages from tourism development:

- the costs of imported goods and services used by tourists;
- the foreign exchange costs of capital investment in tourist facilities;
- payments abroad in the form of profits and capital remittances by foreign tourist companies; wage remittances by expatriate workers; interest payments on foreign loans; management, royalties and other fees; and payments due to foreign travel agents and tour operators;
- promotion and publicity abroad;
- overseas training of personnel; and
- extra expenditure on imports resulting from consumption by residents who have earned income from the tourism industry and/or whose consumption patterns have altered due to the demonstration effects of tourism (Pearce 1989, p. 196).

Hill (1989) specifically addressed the possibility of Dutch disease in Bali. He argued that the very elastic labour supply in Bali, resulting from its proximity to Java, limited the amount by which real wages can rise. In other words, the opportunity for 'Dutch disease' was limited. Hill concluded that the overall economic effects of tourist sector growth probably led to the expansion of a number of sectors, raised incomes and employment, and induced a capital inflow, without any significant contractionary effects on any sector. He believed, on balance, that

tourism had conferred significant economic gains to Bali (Hill 1989, p. 346).

Another negative characteristic often associated with tourism is the nature of employment in the industry. Employment tends to require a low technical level of expertise; involve high labour mobility; demand unsociable work periods and hours; and result in employee dissatisfaction (Vellas & Bécheral 1995, pp. 218–219).

Much of the discussion of the negative environmental and cultural effects of tourism in Indonesia has centred on Bali. The evidence of the net benefits of tourism in Bali is mixed. Perceptions of the negative aspects seem to originate largely from outside Bali. Foreign tourists may be increasingly finding Bali less appealing as pollution and congestion increase. This may lead them to choose other destinations within or outside Indonesia. Booth (1990) suggested that there was little sign that the Balinese themselves felt that the tourism industry had severely harmed their culture. She believed they were more inclined to stress the benefits of tourism in terms of employment, improved infrastructure and accelerated industrial development (Booth 1990, p. 72). The development of tourism might be environmentally and culturally preferable to using the same natural resources for other industries which might have a greater negative impact (for example, the case of a beach used for tourism rather than mining).

While Bali has been successful in attracting large numbers of international tourists, the development of tourism in Bali has not followed the original path planned. It has not lived up to the expectations and targets that were set. The level of tourist arrivals has been well below what was originally anticipated, and a considerable proportion of arrivals have been young, low-income travellers rather than the targeted upper-income groups. As a result, a serious oversupply of facilities has developed, putting in question the economic benefits of the sector. These factors led Hill to conclude, 'It is not at all clear that the net economic benefits of this particular kind of tourism development have been positive' (Hill 1989, p. 344).

How the Indonesian government attempts to prevent and deal with the disadvantages and risks associated with tourism development is critical to the future expansion of tourism. The preservation of tourism attractions and the protection of traditional cultures and isolated societies from the negative aspects of modern tourism development are among the more important challenges facing provincial and national authorities (Corner 1989, p. 203).

TOURISM AND ECONOMIC DEVELOPMENT THEORY

Most of the literature on tourism focuses upon the impacts of tourism rather than seeing these within the broader context of development theory. The limited literature that has tackled the broader issues has generally viewed the relationship between tourism and economic development as positive. Examples include Hill (1989), Go and Jenkins (1997), Vellas and Bécheral (1995) and Modeste (1995).

Pearce (1989) provided a good overview of the literature on tourism and its relationship to economic development. He argued that tourism had been largely ignored by the development literature and went on to discuss the limited amount that had been written (for example, Krapf (1961), Bryden (1973), de Kadt (1979)). Pearce's discussion will be drawn on extensively below.

Just as there are a number of ways to attempt to measure tourism's contribution to a country, there are also a variety of economic theories and tourism development models underpinning the different viewpoints regarding the ultimate impact of tourism.

Economic theory

The economic study of tourism has changed dramatically since it started in earnest in the 1960s. Three stages can be identified. Throughout the boom period of the 1960s, studies focused purely upon the economic impact of tourism and generally discussed this as being positive (see Krapf 1961). Studies that were more sceptical and critical of tourism's social and cultural impact emerged from the mid-1970s (see de Kadt (1979), Bryden (1973)). Since the early 1980s there has been a more cautious and balanced approach to the economic analysis of tourism. The academic debate over its advantages and disadvantages in comparison with other industries is ongoing.

Growth theories

In the 1960s there was a very positive view of tourism as an 'engine of growth'. This was based on traditional neoclassical growth theories that saw growth as being driven by internal forces, predominantly investment in capital. Under this view, tourism positively contributed to economic growth through the investment in tourism and transport infrastructure required for tourism development. Rostow's 'stages of economic growth' theory was central to this traditional approach (Rostow 1990, pp. 428–441). Krapf (1961) drew on Rostow's model to conclude that tourism had a 'special function' in developing countries that he defined as a series of economic imperatives (for example,

international competitiveness, improved balance of payments, employment generation, multiplier effects and balanced growth). Krapf's view, focusing upon tourism's contribution to economic growth, dominated thinking on these issues throughout the 1960s and still persists in many ways today.

From the mid-1970s theories about economic growth and development became more pessimistic. Similarly, the focus shifted toward the negative impacts of tourism based upon the modern growth theories generally referred to as 'dependency' theory or 'core-periphery' theory. A wider perspective on growth and development emerged with these theories and the role of external forces was seen as more significant. Kassé (1973) was one of the first writers to question the supposed benefits of tourism and examine its costs. Bryden (1973) took this thinking further, raising 'serious doubts about the viability of tourist development in its present form' (Pearce 1989, p. 12). He recognised that tourism development takes different forms and that its impact is dependent on the form taken.

More recently, endogenous growth models have emerged. Under these models, endogenous technical progress is the key explanatory variable. Human capital theories then built upon neoclassical theory and enabled neoclassical theory to explain persistent differences in growth rates between countries (which was what endogenous theory had sought to do). Now there is a more balanced view—accounting for both the advantages and disadvantages of tourism in promoting economic development and also greater recognition of the country-specific nature of tourism's impact.

The explicit promotion of tourism in Indonesia (and many other countries) with the objective of increasing economic growth and development, and regional development in particular, is based upon neoclassical growth theories incorporating both physical and human capital to explain growth. Countries pursuing tourism development hope that tourism will improve both the physical capital and the quality of human capital through investment in infrastructure and education and training respectively. In addition, the dangers and possible negative impacts (economic, environmental and social/cultural) identified in dependency theories also play a significant role in shaping tourism policy in Indonesia.

Van Doorn (1979) is one of a few writers to explicitly link tourism and economic development. He proposed a typology (see Figure 3.1) which combines levels of social and economic development, based on prosperity and welfare criteria, with levels of tourist development. However, Pearce pointed out that the typology was not sufficiently

FIGURE 3.1 VAN DOORN'S TYPOLOGY

Stages of tourist development

Stages of development	Stage 1	Stage 2	Stage 3
HWLP			
LWHP			
LWLP			

Stage 1: Discovery—new areas found by drifters.

Stage 2: Local response and initiative—supply stems mainly from local resources. Decisions regarding tourism incrementally made by local authority.

Stage 3: Institutionalisation—decision control and tourism development passed out of hands of local community. Standardisation, policy making and planning by regional or national authority.

HWLP: high welfare, low prosperity

LWHP: low welfare, high prosperity

LWLP: low welfare, low prosperity

Source Pearce 1989. p. 13.

elaborated on (Pearce 1989, p. 12). Van Doorn also suggested that theories of development must be taken into account in the assessment of the impact of tourism.

According to Pearce (1989) several geographers have been much more explicit in setting their analysis of tourism in the context of modern theories of development. For Hills and Lundgren (1977), the core-periphery and dependency theories are central to international tourism. Political scientists have also examined tourism in relation to dependency theory, discussing many of the disadvantages of tourism mentioned above. De Kadt (1979) focused upon social and cultural aspects of tourism and development and recognised that tourism can take many different forms (Pearce 1989, pp. 13–14).

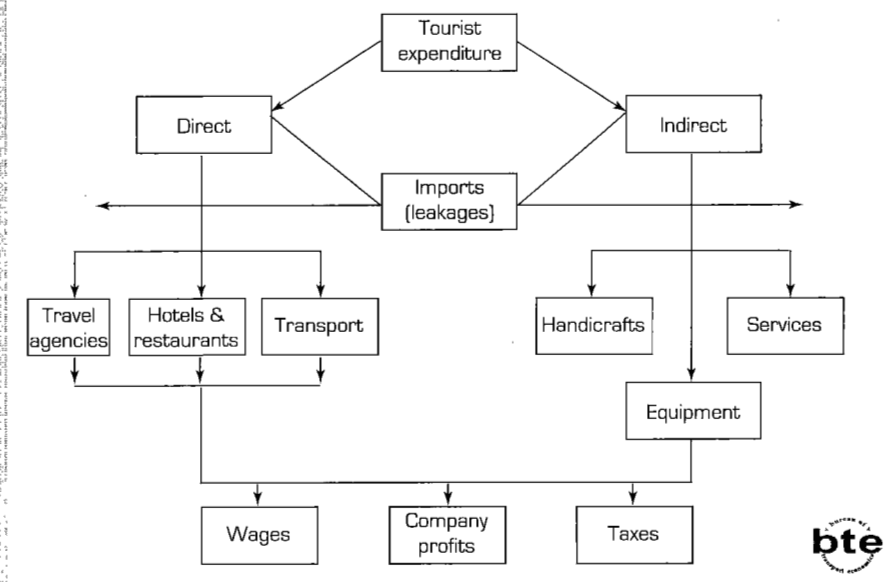
Multiplier effects

Much of the discussion of tourism's contribution to economic growth and development concerns the large number of industries throughout the economy upon which are affected by tourism. The 'multiplier effect' of tourism occurs as expenditure on tourism filters through the

economy, providing stimulus to other sectors (illustrated in Figure 3.2). The multiplier is a measure of the impact of extra expenditure on an economy. It is often assumed that tourism has larger and wider-reaching multiplier effects on the whole economy than other industries. There have been attempts to quantify the tourism multiplier for various countries, but the number of industries involved has made this a difficult task. The characteristics of a local area and the nature of tourism in the area will determine the value of the multiplier. The greater the range of economic activities in an area, the greater the multiplier is likely to be, but higher values of imports will reduce its size.

Vellas and Bécheral (1995) identify three different forms that extra tourism expenditure may take. Direct tourism expenditure consists of expenditure by tourists on goods and services and expenditure on goods exported or investments related to tourism. Indirect tourism expenditure is transactions between businesses caused by direct tourism expenditure. Induced tourism expenditure consists of increased consumption expenditure resulting from the increased income provided by direct tourism expenditure (Vellas & Bécheral 1995, p. 231). Vellas and Bécheral also examine the four kinds of multipliers normally used in international tourism: the sales multiplier (measures additional turnover generated by additional tourism expenditure), the production

FIGURE 3.2 THE TOURISM MULTIPLIER



Source Vellas & Bécheral 1995, p. 230.

multiplier (measures the extra production), the income multiplier (measures the receipts or income generated as a result of extra tourism expenditure), and the employment multiplier (measures the effect of extra economic activity on employment) (Vellas & Bécheral 1995, pp. 231–232).

There are several limitations associated with the use of multipliers:

- insufficient data;
- variations in the marginal propensity to consume;
- inelasticity of supply—most multiplier studies assume supply is elastic—this is not always the case;
- the static feature of the production function—the multiplier represents the past and cannot accurately predict the future; and
- the time factor—the static nature of the multiplier model does not take into account the length of time necessary for the multiplier effect to influence the economy (Vellas & Bécheral 1995, pp. 233–234).

Growth triangles

Growth triangles are a specific form of regional economic cooperation. Growth triangle theory and its application to tourism is relatively recent. Growth triangles are defined as transnational economic zones spread over relatively large but well-defined, geographically adjacent areas in which differences in factor endowments of three or more countries are exploited in order to promote external trade and direct investment (Thant & Tang 1996, p. 1). Go (1997, p. 9) argues that the concept of growth triangles is relevant to tourism development in general, and development and marketing, in particular. Growth triangles also offer the potential to develop 'international circuit tourism'. For example, studies have indicated that close to 70 per cent of US visitors bound for the Far East visited more than one country in the region (Go 1997, p. 9). Growth triangles and the concept of international circuit tourism by promoting mutually beneficial cooperation among countries in a region have the potential to increase tourism development and create synergies for the countries involved.

Criticisms of the theory—Forsyth and Dwyer

Forsyth and Dwyer have questioned the assumptions surrounding the positive impact of tourism on economic development in several papers throughout the 1990s (1991, 1992a, 1992b, 1992c). They stress

that the net benefits flowing from additional tourism expenditure are uncertain. They argue that, when tourism expenditures increase, the country can gain or lose since the expenditure requires resources to be used. Whether there are benefits or costs depends on what distortions are present in the economy (Forsyth & Dwyer 1992c, p. 18).

Forsyth and Dwyer (1991, 1992c) examine specific distortions and their implications for tourism in detail. Briefly these include the following.

- Taxes and subsidies—market prices may not be measures of opportunity cost or shadow prices of inputs, because taxes and subsidies may be present. Typically, market prices will exceed shadow prices and extra expenditure by tourists will create a net benefit.
- Externalities—tourism can create both positive and negative externalities and it is difficult to know whether the net effect is positive or negative.
- Terms of trade effects—extra tourism pushes up the demand for tourism services and causes prices to rise since several inputs are not in perfectly elastic supply. On balance, the host country will gain from selling its tourism services at a higher price. This effectively amounts to a terms of trade improvement, the size of which depends on supply elasticities in the industry.
- Government revenue effects—if tourism results in increased net revenues to government it will be possible for governments to reduce taxes or increase expenditure elsewhere. This will reduce distortions elsewhere and create a net benefit for the economy.
- Labour market effects—additional tourism expenditure could result in increased employment, if it occurs in a region with unemployment or in an underemployed economy. In such a case, the wage paid would exceed the supply price, or shadow wage of labour, and thus there would be a net gain to the economy. Further, since labour earnings are taxed, shadow and market wages may diverge even if there is no unemployment.
- Foreign exchange effects—if exchange rates are not free to vary to equilibrate demand for and supply of the currency, or where there are trade distortions such as tariffs and export subsidies, the shadow foreign exchange rate will differ from the market rate. If the shadow price of foreign exchange exceeds the value represented by the market exchange rate, there will be benefit to the economy from extra tourism expenditure.

- General equilibrium aspects—when foreign tourism expenditures increase, other industries are affected. These considerations have important implications for the measurement of the benefits from tourism, since it is the net benefit after allowing for the contraction of other industries that is relevant (Forsyth & Dwyer 1991, pp. 3–7 & Forsyth & Dwyer 1992c, pp. 8, 10).

Forsyth and Dwyer (1991) argue that measuring the contribution of tourism using GDP or employment effects is misleading and inaccurate. To obtain a more realistic measure, tourism's benefits and costs need to be taken into account. Using GDP or employment measures ignores the costs associated with the tourism increase. Forsyth and Dwyer therefore use a benefit–cost analysis framework to analyse the welfare effects of changes in foreign tourism (Forsyth & Dwyer 1991, p. 2). Their approach measures benefits and costs in terms of surpluses gained or lost.

The emergence of computable general equilibrium (CGE) models has meant that traditional ways of measuring tourism's contribution, like input–output analysis, have now been recognised as inadequate. CGE models include economy-wide effects in determining tourism's economic contribution. However, a major limitation of CGE models is that they neglect environmental and socio-cultural impacts which, in the case of the tourism industry, may have particular importance (Forsyth & Dwyer 1992a, pp. 6–7, 9).

Two of the most commonly discussed benefits of tourism are foreign exchange earnings that improve the current account deficit, and employment creation. Forsyth and Dwyer (1991) critically examine both of these. They argue that additional tourism will not reduce the current account deficit and that this is an example of the pitfalls of using partial, not general, analysis. They find that the most likely ultimate impact will be a negligible impact on the current account. However, they do acknowledge that there may be benefits to a country from earning foreign exchange, since the shadow price of foreign exchange could exceed the market rate (Forsyth & Dwyer 1991, p. 9).

Another of the more frequently mentioned benefits of foreign tourism expenditure is the creation of jobs. Most measures, using input–output analysis or multipliers, which estimate jobs generated by international tourism, are misleading. They are not measures of the net number of jobs created by the tourism industry. They ignore general equilibrium effects and do not include the jobs lost or displaced by tourism expansion. Overall, major impacts on aggregate labour demand, as a result of increased tourism expenditure, are not likely according to

Forsyth and Dwyer, although they acknowledge that some positive regional effects may occur (Forsyth & Dwyer 1991, p. 13).

Forsyth and Dwyer (1991) conclude that additional foreign tourism expenditures are very likely to produce net benefits for the home country, though these benefits are unlikely to be large in relation to the tourism expenditure. They also point out that the gains from extra tourism receipts would be unlikely to be much greater, or much less, than the gains from increases in export receipts for other industries (Forsyth & Dwyer 1991, p. 18).

Vellas and Bécheral (1995) identify two possibilities that an increase in tourism demand may have. One possibility leads to economic growth and an increase in employment. The other leads to inflation and unemployment. Vellas and Bécheral go on to state that:

> if a country is industrialised and has an economy producing below capacity, ... a growth in international tourism demand will be positive for the country. If the country is a developing country with an economy suffering from a lack of productive sectors and insufficient infrastructure and superstructure, ... a growth in international tourism demand will have negative repercussions on the country (Vellas & Bécheral 1995, pp. 225–227).

This type of superficial analysis of tourism's impact that associates each scenario with industrialised or developing countries is inaccurate and misleading. The statement contradicts the actions and policies of developing countries that implement tourism development policies with the aim of improving productive sectors and infrastructure. The analysis contains no concept of the opportunity cost of tourism or comparisions of tourism's advantages versus any other sector or industry. Vellas and Bécheral (1995) do explicitly link tourism and economic development but incorrectly assume that economic growth and economic development are equivalent: 'Because tourism needs investment, the growth of the tourism sector remains closely linked to global economic development' (Vellas & Bécheral 1995, p. 59). Economic development is a much broader concept than economic growth, which is measured only by GDP/GNP. Economic development encompasses not only economic indicators of prosperity like GDP but also other social indicators like education, infant mortality rates and distributional consequences.

It is not only Vellas and Bécheral who are subject to this criticism, as most of the literature discussed continues to reflect the dominant view of development simply being equivalent to economic growth. Most studies analyse tourism's contribution to development in terms of foreign exchange earnings, GDP, employment, state revenues and other such measures. Forsyth and Dwyer (1991), in taking a

cost–benefit analysis approach, are the only economists discussed here who use a framework that would allow some calculation of non-economic benefits and costs.

Much of the literature can be criticised for its lack of consideration of the different types of tourism concerned or the way in which tourism has developed, both of which are crucial to tourism's impact (Pearce 1989, p. 15). The literature on tourism in developing countries typically concentrates on coastal tourism. Other types of tourism (e.g. adventure, historical, cultural) are largely ignored. The heterogeneous nature of tourism does not mean that the different types of tourism are mutually exclusive; in fact, in many cases they are complementary.

Overall, the impact of tourism on economic variables has generally been shown to be reasonably positive (for example, Jenkins 1997) and a more balanced picture of tourism's contribution to growth and development has emerged over the decades. Pearce (1989) points out that any comprehensive assessment of tourism's contribution to development requires a more thorough evaluation of tourism's performance against that of other sectors. Most importantly, a growing awareness amongst the public sector, developers, and host populations of the social, cultural and environmental costs and benefits of tourism has eventuated (Pearce 1989, pp. 289, 292). The benefits of tourism cannot be assumed to exceed the costs. The net benefits of tourism should be assessed on a case-by-case basis.

Models of tourist development

There are many different models of tourist development, which aim to show the development path of tourism in both developed and developing countries. Models of tourist development tend to encompass not only basic economic aspects but also the geographical, cultural and social aspects of tourism development through such things as attitudinal changes. Pearce (1989, pp. 16–23) examined four different models.

Miossec's (1976, 1977) model is one of the clearest and is probably most appropriate for this study on tourism and transport infrastructure. The model (illustrated in Table 3.1) classifies the structural evolution of tourist regions through time and space. Changes in the provision of facilities and in the behaviour and attitudes of the tourists, the local decision-makers and the host populations are the focus of the model.

The model divides tourist development into five phases and identifies these using four categories: resorts, transport, tourist behaviour and the attitudes of decision-makers and population of the receiving region.

TABLE 3.1 MIOSSEC'S TOURISM DEVELOPMENT MODEL

	Phase resorts	*Transport*	*Tourist behaviour*	*Attitudes of decision-makers and population of receiving region*
0	Territory traversed and distant	Transit Isolation	Lack of interest and knowledge	Mirage Refusal
1	Pioneer resort	Opening up	Global perception	Observation
2	Multiplication of resorts	Increase of transport links between resorts	Progress in perception of places and itineraries	Infrastructure policy Servicing of resorts
3	Organisation of the holiday space of each resort Beginning of a hierarchy and specialisation	Excursion circuits	Spatial competition and segregation	Segregation Demonstration effects Dualism
4	Hierarchy Specialisation Saturation	Connectivity maximum	Disintegration of perceived space Complete humanisation Departure of certain types of tourists Forms of substitution Saturation and crises	Total tourism Development plan Ecological safeguards

Source Pearce 1989, p.17.

The key factor to come out of Miossec's model is that the impact of tourism is related to development and, more importantly, particular impacts are related to specific stages of development (Pearce 1989, p. 18).

Applying Miossec's model to Indonesia at present is difficult. Different areas of Indonesia are at different stages of this development model. Bali is most likely to be at the final stage while most of eastern Indonesia would be somewhere between stages 0 and 1. Indonesia as a whole is currently best described as being between phases 2 and 3, where

resorts and tourist areas are expanding beyond the initial pioneer location, transport links are improving and infrastructure policies exist.

Butler (1980) developed a more complex model of the hypothetical evolution of a tourist area. His model is based on the product cycle concept and it identified six stages of tourism development: exploration, involvement, development, consolidation, stagnation, and rejuvenation or decline (Pearce 1989, p. 18).

Gormsen (1981) developed a model of the spatio-temporal development of international seaside tourism. The model related different stages of accommodation development and regional/local participation in tourism over time to four differently defined periphery country groups. Using this model he found that regional participation in the development process increased rather than decreased over time. Gormsen's model, however, is time- and space-specific (Pearce 1989, pp. 19–21).

Thurot (1973) discussed the early development of international tourism in the Caribbean in terms of class succession. He outlined a process by which potential tourist areas passed through three successive phases during their tourism development:

Phase 1: discovery by rich tourists and construction of an international class hotel;

Phase 2: development of 'upper middle class' hotels (and expansion of tourist traffic); and

Phase 3: loss of original value to new destinations and arrival of middle class and mass tourists.

These three phases appear to model the development of Bali reasonably well. Thurot based his model on his analysis of the evolution of airline routes (Pearce 1989, p. 22). Plog (1973) took an entirely different approach, basing his model on the personality types of travellers (Pearce 1989, p. 22).

The different models outlined here are not exhaustive—the field of tourist development models is yet to be fully supported by a strong theoretical base but, when this type of approach is combined with the economic approach discussed above, a more comprehensive picture of the impact of tourism on both economic growth and development begins to emerge.

TRANSPORT INFRASTRUCTURE IMPLICATIONS

To operate successfully, tourism requires developed infrastructure such as airports, roads, telecommunications, potable water and energy. Without

> these, accommodation and leisure facilities cannot be developed (Vellas & Bécheral 1995, p. 59).
>
> Tourism usually develops within an existing socio-economic structure where some form of urban hierarchy and some transport networks are already found (Pearce 1989, p. 18).
>
> Available and efficient transport structures are key conditions for the development of international tourism (Vellas & Bécheral 1995, p. 161).
>
> Adequate infrastructure is essential for the successful development of tourism and can be a particularly critical factor in less developed countries and regions which often have limited infrastructure (Inskeep 1991, p. 11).

That some level of infrastructure development must exist before tourism development can proceed at a significant scale is widely accepted, as shown in the above quotes. Without actually providing any detail, the literature suggests that there is some minimum level of transport facilities required for tourism development. To be successful in attracting significant tourist numbers, a destination must have basic infrastructure like water, sewerage and some transport in place. The level of infrastructure development necessary to attract tourism varies with the different types of tourists an area is aiming to attract. There are some types of tourism, mainly adventure and backpacker, that are not likely to require the same level of infrastructure development as the mass tourism market. Despite being relatively small in number from the perspective of world tourism as a whole, the proportion of adventure and backpacker tourists is high in many developing countries.

The link between transport and economic development has been widely discussed. Transport plays a key role in eliminating isolation and increasing economic development in countries like Indonesia. However, Cervero (1992) points out that transport infrastructure and services are not a sufficient condition for economic growth, but are unquestionably important precursors to growth. He also notes that new road development has played a pivotal role in the economic development of Indonesia's lagging regions (Cervero 1992, p. 240).

Cervero (1992) argues that the past has shown that simply building roads, airstrips and other transport improvements will not necessarily enhance development (Cervero 1992, pp. 219–220). The same applies for tourism—simply building the tourism and transport infrastructure will not necessarily bring tourists and economic development. Investment in other resources, particularly people and marketing, is also essential.

Lack of infrastructure is a self-reinforcing problem—to attract tourism, infrastructure needs to be developed but to justify the infrastructure

needed for tourism, some level of tourism must already exist. For this reason, both community needs and tourism potential should justify infrastructure development before it is undertaken. Basic infrastructure (like sewerage and electricity) should be developed first, then tourism and transport infrastructure should develop concurrently. The opening of Bali Beach Hotel in Sanur in the mid-1960s and the opening of the Ngurah Rai airport to international flights in 1969 exemplify the concurrent development of tourism and transport infrastructure required to bring about development and growth. The tourism development models discussed above generally argue for the simultaneous development of both tourism and transport infrastructure. Inskeep (1991) discusses the multiple use of infrastructure for both tourism and local community needs. He suggests that this is another possible socio-economic benefit of tourism (Inskeep 1991, p. 120). Conversely, transport infrastructure developed for other economic activities, such as mining, may provide access to tourism attractions in the vicinity.

Air transport has contributed to the creation of new tourism markets far from tourist-generating countries. Air transport is particularly important for Indonesian tourism as it represents the bulk of the travel mode (85 per cent) used by tourists in Asia and Australasia. Technological improvements in air travel have helped increase the attractiveness of the Asia–Pacific region. Three conditions characterise air transport in the 1990s: an exceptional growth, increasingly competitive markets and extreme vulnerability to international economic and political crises (Vellas & Bécheral 1995, p. 119). These factors have considerably affected tourism in Indonesia, and will continue to do so.

There have been enormous improvements in eastern Indonesia's road, sea and air transportation networks during the past 20 years, mainly as a result of government subsidies as part of the transmigration program. Chapters 5 and 6 will examine eastern Indonesia's air transport network and evaluate its adequacy.

Several important conclusions can be drawn from the above discussion on theory and the literature.

- Tourism development should be just one part of an overall development strategy.

- Tourism is one possible tool for economic development—with specific costs and benefits evaluated carefully it can produce positive outcomes for a region, but not in isolation. Other appropriate

measures such as laws, regulatory framework, people and financial/investment markets are needed.

- While tourism is a stimulus to growth in many countries, the potential for other economic sectors to stimulate growth should not be ignored.
- For tourism development to be successful both transport and tourism infrastructure need to develop in conjunction with each other and reinforce each other.
- The analysis of tourism development should consider not only conventional economic but also environmental, social and cultural impacts.
- Whether the potential social, cultural and environmental disadvantages of foreign tourism are outweighed by its conventional economic benefits remains to be resolved.
- Recognising the heterogeneity of tourism development is important, because different types of tourism development can have vastly diverse impacts and therefore influence economic development in distinct ways.

In the theory and planning stages, Indonesia's tourism development seems to support these conclusions reasonably well, but the practical implementation may differ from this ideal. Eastern Indonesia has a large number of potential tourist attractions. The theory presented in this chapter suggests that the attractions most likely to succeed are those that are already reasonably accessible from established transport links. The theory also suggests that tourism alone is unlikely to be sufficient to develop new transport infrastructure. The models of tourism development can give a guide to the type of tourism likely to be attracted to the more distant parts of eastern Indonesia and the sorts of facilities that need to be provided. This is taken up in Chapter 7.

Economic theory implies that good policies can control a lot of the potential disadvantages of tourism. For example, environmental quality can be maintained by sensible allocation of property rights and the distribution of the benefits of tourism can be influenced by taxation policies. In general, major new tourism projects should be subject to a cost–benefit analysis that takes account of the policies in place or proposed, the distribution of benefits and any leakages of the benefits from the region.

4

DEVELOPMENT OF THE SCENARIOS

The previous chapters have discussed tourism theory and tourism development in Indonesia. The discussion in those chapters provides some insight into appropriate policies and the type of tourism development that can be expected in eastern Indonesia. The next stage is to estimate the future number of tourists visiting Indonesia.

The traditional method of forecasting demand for tourist numbers or other economic variables uses such methods as econometric or time-series analysis. These methods have been developed and refined over many years. Econometrics in particular has been successful in quantifying the complex relationships between the dependent and independent variables.

Essentially, all traditional forecasting methods use past trends to understand how the industry being modelled has performed, and then they use this information as a guide to future trends. One of the difficulties with traditional methods is that, if the future is very different from the past, the relationships modelled using past data may have no, or little, relevance. Using the jargon of modelling, econometric and time-series analyses have difficulty in forecasting turning points with any reliability, especially if they have not been experienced in the past.

At the time the BTE and R&D Agency were considering the future level of tourism in eastern Indonesia, Indonesia was in the midst of its most serious financial crisis for 30 years. The development of the crisis and the reasons for it are well documented and need not be repeated here[5]. The core of the crisis was a rapid and massive decline of over 80 per cent in the value of the rupiah, which, together with a large amount of short-term unhedged private debt in US dollars, created unprecedented difficulties for the Indonesian economy. At the same

5 See for example Soesastro & Basri (1998), Johnson (1998) and speeches by Wolfensohn (1998) and Stiglitz (1998).

time, the Indonesian government had to deal with the effects of a prolonged drought on the availability of food.

Indonesia is going through a period of political change which has resulted in a new president for the first time in 32 years. These political developments and Indonesia's rate of economic recovery will have a major impact on how international tourists perceive Indonesia as a potential destination. In the medium to long term, the rate of recovery will determine how well the government and the private sector can provide the infrastructure and facilities required.

Econometric and time-series analyses and other quantitative methods of extrapolating past trends provide little assistance in estimating future tourism demand in these circumstances. The changes in the basic macroeconomic variables have been large so those methods such as econometrics, which are more suited to marginal changes in the independent variables, become unreliable. The project team concluded that a forecasting method that explicitly took account of the large changes in the underlying factors influencing tourist numbers and the considerable uncertainty in future developments in Indonesia would be desirable.

Scenarios are frequently used for developing business plans for an uncertain future and facilitate the investigation of a range of possible factors influencing business outcomes. Because the future course of events in Indonesia is somewhat uncertain, scenarios offer a useful technique to explore possible outcomes of the financial crisis and the impacts these outcomes might have on tourist numbers.

TYPES OF SCENARIOS

Although scenarios have been used for planning for some time, the formal use of scenarios for exploring alternative futures is a relatively recent concept. Kahn (Huss 1988, Mushkat 1990, p. 19) is usually credited with being the modern developer of scenario analysis. Kahn defined scenarios as 'hypothetical sequences of events constructed for the purpose of focusing attention on causal processes and decision points'. Kahn used scenarios to better understand the dynamics of such issues as military conflict and national development. His focus was on the consequence of policies and actions open to the government (Mushkat 1990, p. 20).

Kahn developed scenarios as a business tool and became well known for his work in this area (Schwartz 1996, p. 7). Scenario planning came of age with the work of Pierre Wack for the Royal Dutch Shell company. Wack and his group were able to use scenarios to anticipate the oil

crisis of the early 1970s and to convince Royal Dutch Shell to develop strategies to respond to the crisis when it occurred. They were not able to predict the timing of the oil price shock, but they were able to identify the forces that led to the emergence of the crisis.

The success of the Shell Company in its use of scenarios for planning resulted in greater use of the technique by business for planning in uncertain environments. The techniques became more refined and adapted to different types of applications. However, scenarios generally have common characteristics. Mushkat, for example, identified three common characteristics of scenarios:

- 'They are hypothetical';

  'A scenario does not normally amount to more than a sketch'; and

- 'Scenarios are (or should be) multifaceted and holistic in their approach to the future' (Mushkat 1990, p. 23–24).

The hypothetical property of scenarios is important. The different scenarios describe possible futures, without necessarily implying that any particular scenario is more likely than another. The role of the scenario is to identify plausible futures so that planning can adapt as the actual future unfolds. In the words of Schwartz (1996, p. 9): 'The end result, however, is not an accurate picture of tomorrow, but better decisions about the future'.

Mushkat (1990, pp. 24–25) distinguishes between descriptive scenarios and normative scenarios. The descriptive scenario describes the future without regard to the desirability of the events making up the hypothetical future. In contrast, normative scenarios make judgements about events that should occur to achieve specific goals.

Boucher (1985, p. 49) identifies four types of scenarios.

- Demonstration scenario

  The essence of this scenario type is that the scenario writer first imagines a future state and then describes a set of plausible events that could lead to that state.

- Driving force scenario

  In this type of scenario the scenario writer first defines a scenario space by identifying the key indicators and specifying the likely range of values for each of the indicators. The objective of the driving force scenario is to 'clarify the nature of the future in question and to contrast this future with others in the same space' (Boucher 1985, p. 51).

- System change scenario

  The system change scenario incorporates a previously developed set of forecasted trends and events. The scenario is then defined by the cross-impact factors that specify how each event or trend impacts on the probability of every other trend or event.

- Slice-of-time scenario

  The slice-of-time scenario starts from a future period and then 'describes how key stakeholders think, feel, and behave in that environment' (Boucher 1985, p. 53).

The driving force scenario is an appropriate method for examining the economic impacts on tourism in eastern Indonesia. In the driving force scenario no assumptions are made about what the future state will be like, as is the case for the demonstration scenario. Although a system change scenario has advantages in being comprehensive, it requires much more information and analysis than was possible in the time available to the study team. The slice-of-time scenario is not useful because it is concerned with conditions in the future without regard to the causal processes that lead to the future state. The driving force scenario has a large element of subjectivity about it, although it is usually supplemented by forecasts of one sort or another. In our application we used information from sources such as the International Monetary Fund (IMF) to assist in devising the scenarios.

DRIVING FORCE SCENARIOS

The driving force scenario is usually associated with the types of scenarios developed by Shell and is the central focus of the book by Schwartz (1996). The development of a driving force scenario involves eight steps (Schwartz 1996, pp. 241–247; Huss 1988).

1. Identify focal issue or decision

   The idea is to start with a specific issue or decision that will define the scope of the analysis.

2. Identify key decision factors

   In this stage the factors that will have the most important implications for the issue or decision are identified. These can include a wide range of factors from macroeconomic conditions to demographic factors and factors specific to the industry being considered.

3. Identify the driving forces

In this stage the forces in the macro-environment that influence the key decision factors are listed.

4. Rank the driving forces by importance and uncertainty

   The driving forces and their interrelationships and their relationships to the key issue are analysed in this stage. The importance and uncertainty of each factor determines to some extent the differences between the scenarios. Scenarios cannot differ for factors that are certain.

5. Define scenario logics

   The important and uncertain driving forces can be used to define a scenario space. Within the scenario space, themes that are coherent, consistent and logical can be constructed.

6. Elaborate the scenarios

   The scenarios are then developed in the form of a story to illustrate how the world moves from here to there.

7. Analyse the implications for key decision factors

   Analyse the implications of the scenarios for the focal issue or decision under investigation.

8. Select leading indicators or signposts

   Develop indicators that provide an early indication of which of the alternative scenarios is likely to best represent the emerging reality.

Writers differ on the purposes of the last two stages. The descriptions shown above are those presented by Schwartz (1996). Huss (1988) describes the last stage as an analysis of the implications for the decision strategies. Mercer (1995) collapses the whole process into six stages, with the last of his stages being equivalent to a combination of stages 7 and 8.

Driving force scenarios were developed to assist corporations plan for an uncertain future. The requirements for this project are similar although based on a broader perspective.

DEVELOPMENT OF THE SCENARIOS

Focal issue or decision

The main focus of the scenarios is to develop an understanding of the future development of tourism in eastern Indonesia. Related to the main focus is the corresponding development of transport

infrastructure in eastern Indonesia to facilitate this. Although the focus is on eastern Indonesia, the tourists themselves come from a wide range of source countries. The factors that influence the attractiveness of eastern Indonesia as a tourist destination may also influence the ability or willingness of potential tourists to travel from their home countries.

The main focus of the scenarios can be summarised as: what influence will factors internal to Indonesia and in other countries have on the number of tourists in eastern Indonesia?

Key decision factors and driving forces

When people are making decisions on travel for tourism, they take many factors into account. Economic factors, such as their disposable income and the costs of travelling to a possible destination, are clearly important. But there are other factors that can be equally important in the choice of one destination over another. For example, poor security, difficult access or poor environmental conditions may dissuade a potential tourist from visiting a destination. Both economic and non-economic factors are included in the driving forces.

Research into tourism generally indicates that the major economic factors influencing the number of international tourists are income levels in the source country and the cost of staying in the intended destination country (BTCE 1998). The cost of staying in the destination country is usually measured by the real exchange rate[6]. Because the real exchange rate is a function of the nominal exchange rate and the relative rate of inflation, these two macroeconomic variables are included in our list of decision factors. Clearly the massive depreciation of the rupiah and the subsequent high rate of inflation will have an impact on tourist numbers in the short term. The Indonesian rate of economic recovery will have a large bearing on future tourist numbers. The scenarios therefore need to take these issues into account.

As well as the macroeconomic factors discussed above, there are a number of government policies that directly affect tourism in eastern Indonesia. These are summarised in Figure 4.1.

The Indonesian government has given priority to the development of eastern Indonesia. As shown in Figure 4.1 there are three segments

6 The real exchange rate between two countries is defined as:

$E_r = C_1 E_n / C_2$

where E_r is the real exchange rate, C_1 and C_2 are the consumer price indexes of the two countries and E_n is the nominal exchange rate.

to the policy. There is the establishment of Integrated Economic Development Areas (IEDA) of which Biak is the first. There are investment incentives for companies wishing to invest in eastern Indonesia. Included in this segment is the government's priority for the investment in infrastructure in the eastern provinces. The third segment is the establishment of regional agreements such as the Brunei-Indonesia-Malaysia-Philippines-East Asia Growth Area (BIMP-EAGA) and the Australia Indonesia Development Area (AIDA). It is highly probable that the regional agreements will remain in place irrespective of the direction of the Indonesian economy and need not be considered further in the development of scenarios. The issue for tourism in eastern Indonesia is how those policies, among those shown in Figure 4.1 affecting tourism in eastern Indonesia, are maintained under the different scenarios.

The driving forces are illustrated in Figure 4.2 and Figure 4.3. For convenience, the driving forces are categorised as external or internal. The external forces are those that are derived from the relationships Indonesia has with other countries or external bodies such as the IMF, and that may have an effect on the number of tourists visiting eastern Indonesia. The internal forces are those that are derived mainly from actions or decisions within Indonesia.

External forces

Of the external driving forces, the most important one is the IMF reform package developed to restore stability to the Indonesian economy, in as much as its policies, implementation and international support are critical factors in restoring confidence. The IMF reforms are designed to overcome the economic problems highlighted by the financial crisis, and in particular to stabilise the economy and to correct some structural issues. The structural issues mostly concern freeing up some elements of the economy by the removal of monopolies and increasing transparency in the financial and corporate sectors. The Indonesian government has undertaken, and is committed to, a number of policy actions and reforms to achieve the aims of the IMF program that are designed to restore economic stability and promote recovery.

The large depreciation in the rupiah will reduce costs for tourists visiting Indonesia. However, the lower exchange rate will have its effect offset to some extent by increasing inflation. By January 1998 the exchange rate had deteriorated to about 17 000 rupiah to the US dollar. Although there was volatility in the exchange during 1998, by the end of November it had strengthened to better than 8000 rupiah to the US dollar.

FIGURE 4.1 INDONESIAN GOVERNMENT INITIATIVES FOR DEVELOPMENT IN EASTERN INDONESIA

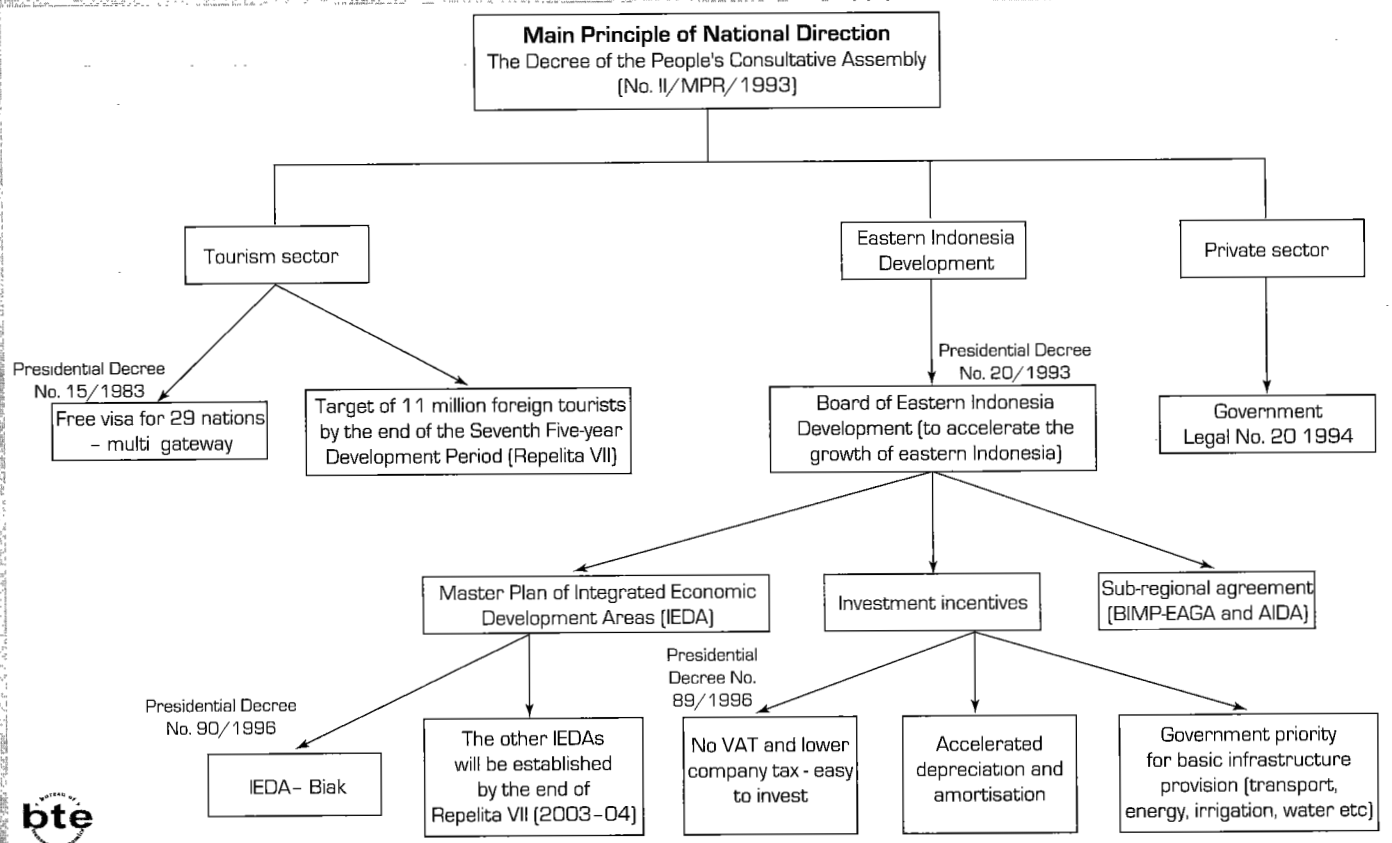


FIGURE 4.2 EXTERNAL DRIVING FORCES AND THEIR RELATIONSHIPS

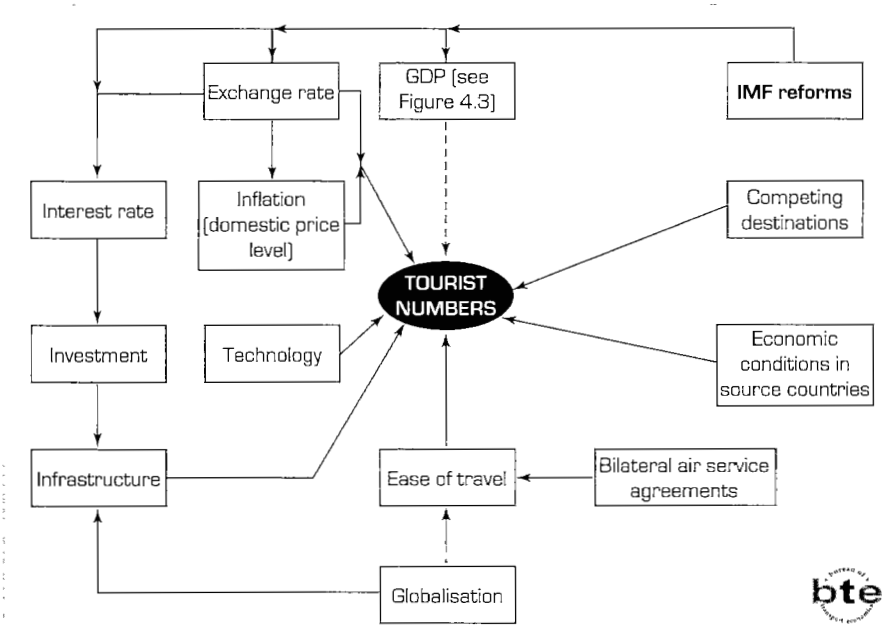
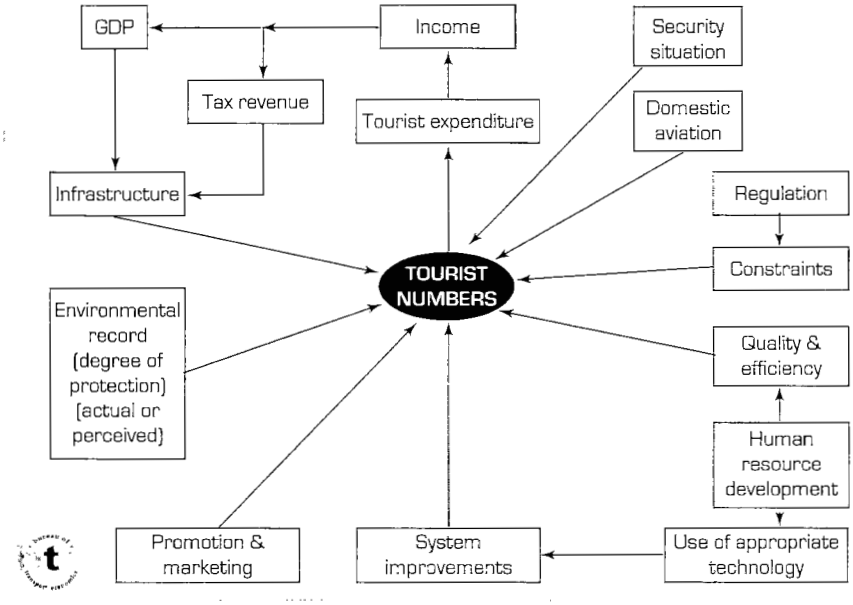


FIGURE 4.3 INTERNAL DRIVING FORCES AND THEIR RELATIONSHIPS



Inflation during the first quarter of 1998 was high, reaching 27.1 per cent for the quarter (Government of Indonesia 1998a) compared with the inflation rate of 5.8 per cent for the last quarter of 1997 (Soesastro & Basri 1998, p. 31). In November 1998 the Indonesian government expected inflation for 1998 to be within its program target of 80 per cent. The decline in GDP for 1998 was also anticipated to be around the expected 15 per cent (Government of Indonesia 1998c).

The combined effects of inflation and exchange rate movements suggest that the costs of staying in Indonesia are more attractive for tourists than they were a year ago. However, a large proportion (64 per cent in 1996) of tourists visiting Indonesia comes from Asian countries also suffering from adverse economic conditions, and this factor will reduce the number of tourists visiting Indonesia (Department of Tourism, Post & Telecommunications 1997a, Table 4). Asian tourists are also likely to be deterred because much of the social unrest in May 1998 was directed toward the ethnic Chinese community.

A further macroeconomic effect of the financial problems has been an increase in interest rates following a tightening of monetary policy. For example, interest rates on Bank Indonesia certificates were increased to 45 per cent per annum on 23 March 1998 (Government of Indonesia 1998a, Appendix I). Interest rates were still high in November 1998 but had started to decline (Government of Indonesia 1998c). If interest rates remain high in the medium term, investment in tourism facilities in eastern Indonesia could be reduced, leading to a constraint on tourism demand.

Financial problems in Indonesia and other parts of Asia may have other long-term effects on tourism demand.

Globalisation

If economic problems in Indonesia reduce the government's resolve to remove impediments to trade in accordance with APEC and WTO agreements, then this could make it more difficult to import equipment needed for tourism facilities and infrastructure. In the long term this may limit the increase in tourism demand. The evidence so far is that this is unlikely to happen. The Indonesian government's Memorandum of Economic and Financial Policies (Government of Indonesia 1998c) indicated that, in November 1998, the intention to remove many impediments to trade and investment was being sustained. Of interest to the transport sector in eastern Indonesia was the abolition of import restrictions on new and used ships (Government of Indonesia 1998b, Matrix).

Air service agreements

Trends in recent years have been to provide greater flexibility in air service agreements between countries. There may be possibilities for making travel to eastern Indonesia easier and cheaper for potential tourists if air service agreements allow greater freedom to develop international routes to and through the region. If the pace of economic recovery is slow, there may be pressure to take a more protective approach to air service agreements to protect national airlines.

Technology

If economic recovery in Asian countries is slow, then airlines operating in the region may find it necessary to delay expanding their fleets, or delay replacement of existing aircraft. In either case the benefits of greater comfort and lower operating costs may be delayed, with a resulting higher cost of travel for tourists in the region. Higher travel costs would serve to dampen demand to some extent. The differences between scenarios due to technology are expected to be small, so those are not considered further.

Internal forces

There was widespread social unrest throughout Indonesia in May 1998. The strength and extent of further social unrest will depend on how well the economy responds to the reforms, and to what extent the reforms are actually implemented. Such social unrest is likely to have a detrimental impact on the number of tourists visiting Indonesia, even if other factors such as the exchange rate are favourable for tourism. Many tourists do not fully appreciate how large Indonesia is. As a result of this, unrest occurring in one part of the country can deter tourists from visiting another part of the country that is many hundreds of kilometres away. Bali is generally perceived as safer and unrest has not had as great an effect on tourist numbers in Bali as for other Indonesian provinces.

Figure 4.3 illustrates a feedback loop involving tourist expenditure and GDP. If the number of tourists increases, then Indonesian income increases. The increased income will generate increased tax revenue for the government and will also lead to increased GDP. Both increases will improve the government's and private sector's ability to provide facilities and infrastructure for tourism. The impact on tourism will be in the longer term.

Related to the implementation of the IMF program is the degree to which regulations in the transport and tourism sectors inhibit tourism

development. A number of the IMF reforms are intended to remove constraints that affect the tourism industry. As mentioned above, if the economy is slow to recover there may be some reluctance to further reduce regulatory constraints. Alternatively, it could also be argued that bad times can produce good policies, so that regulatory reform could be speeded up to assist economic recovery. Both possibilities need to be examined.

The economic health of Indonesia's domestic aviation industry has important ramifications for tourism to eastern Indonesia. In September 1998 Indonesia's airlines were in severe financial crisis, forcing one domestic carrier to cease operations and the remaining operators to cut both aircraft fleet and operating routes significantly. The implications of this for tourism are important. These include fewer services on many routes, greater safety concerns and a generally less reliable air transport network available for tourists. The project team estimated that, by August 1998, flight frequency in eastern Indonesia had declined by 35 per cent and seat capacity by 22 per cent compared with the pre-crisis level. Domestic aviation problems would have a much less significant effect on international tourists visiting Bali since they mostly arrive directly at Denpasar airport.

During the field trips undertaken by the project team, many people meeting with the team commented that human resource development was an important need in eastern Indonesia to facilitate development in the tourism and transport industries. The team's own observations supported this view. Again, if economic recovery is slow, then much-needed improvements in human resource development may lag behind demand.

Improved skills of people are related also to the provision of improved technology. For example, airline booking systems in eastern Indonesia could be improved, but the use of new technology to implement better systems would best be undertaken in conjunction with training to ensure that the technology was used as effectively as possible. The faster the recovery in the economy, the faster the introduction of appropriate technology.

Environmental issues can have a major impact on the number of tourists visiting eastern Indonesia. During September and October 1997 major forest fires in Kalimantan severely disrupted transport services and inhibited the movement of tourists. Apart from the actual disruption, publicity about the fires discouraged potential tourists from visiting Indonesia. Data in the appendices illustrate the reduction in tourist numbers during 1997, much of which can be attributed to bad publicity due to forest fires. Slow economic recovery could reduce the

capacity to prevent future environmental problems. Many of the tourist attractions in eastern Indonesia, such as forests and coral reefs, are dependent on policies that maintain their attractiveness. Perceptions that environmental protection was inadequate would deter potential tourists from visiting these attractions.

Promotion and marketing are very important for encouraging tourists to visit eastern Indonesia. The project team obtained little information about the marketing of eastern Indonesia. However, anecdotal evidence during the field trips suggested that marketing was focused on European countries with little occurring in Australia (except for Bali). Evidence shown in the appendices indicates that Europe is declining in importance as a source for tourists to eastern Indonesia and that Asia is increasing in importance (for example see Table II.21). Depending on how the financial problems in Asia are resolved, there may be scope for better targeting of the promotion effort. A slow economic recovery may make it difficult to promote the region adequately so that tourism demand develops more slowly than might be preferred.

Important and uncertain driving forces

In this stage the scenario developer is expected to determine a ranking of the driving forces. The driving forces affecting tourist numbers are often interrelated. For example, the exchange rate and inflation rate will depend to a large extent on the Indonesian government's implementation of the IMF reform program. Perceptions by tourists of security in Indonesia will depend, in part, on the degree of unrest, which in turn will depend on the pace of economic recovery. Because of the interaction between the driving forces, it is difficult to develop a definitive ranking. However, in this application, it is useful to categorise the driving forces into the most important and the less important.

Among the external forces the key is the IMF program and how the Indonesian government implements it. The IMF program is therefore categorised among the most important driving forces. The program will have a direct impact on the exchange rate, inflation rate and interest rates. The first two of these will have significant short-term impacts on tourist numbers and are consequently placed in the most important category. Interest rates could have a long-term effect. The government has been broadly on target in meeting its commitments under the IMF program and in early December 1998 there have been signs of a bottoming out of economic decline. Sustained commitment to reform will have a direct bearing on continued recovery and increased confidence.

Other important and uncertain external driving forces are the economic conditions in the source countries for tourists and the ability of competing destinations to attract tourists away from eastern Indonesia. Asian countries, especially Japan, are becoming increasingly important sources for tourism to eastern Indonesia. Because they have been seriously affected by the financial crisis, and because there is still uncertainty concerning their path to recovery, the economic conditions of these countries must be included in the scenario driving forces.

Countries that compete with eastern Indonesia as a tourist destination are widely dispersed throughout the world. Although many of the competing countries will have similar competitive effects for all scenarios, Asian countries are among the strongest competitors of Indonesia. Their ability to compete will depend on how well they manage the financial problems of the region. For this reason competing countries are included in the scenarios.

In the longer term, investor confidence, interest rates, liberalisation of trade and air service agreements may have an effect, but are unlikely to have a major impact in the short term.

The internal driving forces that most affect tourist numbers are those that directly influence whether or not tourists visit eastern Indonesia. The internal driving forces with the most direct impact are perceptions of personal safety, environmental record, the economic health of domestic airlines, and promotion and marketing. These can have significant short term effects on tourist numbers.

The social unrest that has taken place in Indonesia has already had a considerable impact on tourism. Total foreign arrivals in Indonesia for the first six months of 1998 were down approximately 23 per cent compared to the previous year (PATA Bali Chapter 1998c). Although there was some subsequent improvement, total arrivals were still down by 21 per cent for the first nine months of 1998 (PATA Bali Chapter 1998c). In June, the month following the peak of the unrest, Bali's visitor arrivals were down by almost 36 per cent (PATA Bali Chapter 1998c). The possibility of further social unrest would very likely strengthen perceptions for many potential tourists that Indonesia was not a safe place. As a result of these perceptions, many tourists have been deterred, and would continue to be deterred, from visiting Indonesia.

In the longer term the recovery of the economy can have an impact on the provision of infrastructure and other factors shown in Figure 4.3. These have a less direct influence on the choices of tourists and are categorised as less important.

The driving forces included in the scenarios are shown in Table 4.1.

TABLE 4.1 DRIVING FORCES USED IN THE SCENARIOS

External[a]	*Internal*[b]
Most important	
Economic conditions in source countries	Expenditure on promotion
Competing destinations	Environmental protection (green)
Response to IMF reforms	Domestic aviation[c]
Exchange rate	Perceptions of personal safety
Inflation rate	
Less important	
Interest rates	Recovery of GDP
Investor confidence	Expenditure on human resource development
Trade liberalisation	Regulatory reform
Air service agreements	Introduction of appropriate technology

Note The order of listing under the headings of 'Most important' and 'Less important' does not imply any ranking.

a. External forces are those deriving from Indonesia's relations with other countries or bodies such as the IMF.

b. Internal forces are those subject to decisions or actions within Indonesia.

c. Not as relevant to Bali as other parts of eastern Indonesia.

Source BTE and R&D Agency analysis.

The scenarios

At the time of developing the scenarios (March to June 1998), the Indonesian economy remained in a severe crisis. The exchange rate was volatile, inflation for the 1998 calendar year to May was 40 per cent (Central Bureau of Statistics (BPS) 1998) and the economy was expected to contract by more than 10 per cent for the 1998 calendar year (Government of Indonesia 1998b). Soon after being appointed in May 1998, President Habibie endorsed the need for political reform and had set a date for December 1999 for a meeting of the People's Consultative Assembly to elect a new president (McBeth 1998). The IMF and the Indonesian government had agreed to the fourth IMF package of reforms (Government of Indonesia 1998b). The Letter of Intent signed on 13 November 1998 and the attached Supplementary Memorandum reported improving economic conditions. The scenarios have been modified to reflect the later information.

Indonesian domestic aviation has faced a severe crisis during 1998. Sempati airlines had ceased operations (DCN 1998b), Merpati had closed 63 domestic routes in March (DCN 1998a) and Garuda was returning all its leased aircraft, leaving only its own aging fleet (Williams 1998)[7]. The Indonesian airlines had agreed to pool their resources from mid-July 1998 to improve their chances of survival. The agreement involved the allocation of routes and the sharing of operating costs (Aviation Report 1998, p. 4). However, in September 1998 it was reported that the planned sharing of resources did not proceed (*Australian Aviation*, October 1998, p. 20).

The three scenarios define the spectrum of likely developments. Circumstances in Indonesia could change very quickly as they did in May 1998. For this reason, the BTE and the R&D Agency have not assigned any probabilities to the scenarios, as the uncertainty surrounding future developments in Indonesia means that any probabilities attached to the scenarios would be unreliable.

Moderate scenario

The Indonesian government implements most of the IMF program as agreed to in June 1998. Although the government has a reasonably strong commitment to the reforms, opposition to some reforms makes it difficult to fully implement the entire package. A new government is in place by March 2000, later than hoped, but early enough to avoid serious domestic unrest. Many in the new government are new to politics and there is difficulty in gaining consensus. The direction of the government is uncertain and this ensures that restoration of confidence continues to be slow.

Inflation (80 per cent) and GDP (-15 per cent) figures for 1998 are consistent with the June 1998 forecasts. In 1999 inflation reduces to 30 per cent per annum and the GDP improves but remains negative at -3 per cent. The Indonesia Bank Restructuring Agency (IBRA) takes over banks in difficulty and this helps restore confidence in the financial system. However, the restoration of confidence is slow because the rate of economic recovery is not as fast as expected.

Interest rates decline during 1999 and the exchange rate stabilises at around 8000 to 10 000 rupiah to the US dollar by the time the new government is in place. By 2002 inflation is brought under control. GDP remains steady in 2000 and real GDP increases slowly after

7 Prior to the financial crisis, the major Indonesian domestic carriers were Garuda, Merpati, Sempati, Bouraq and Dirgantara.

2000, reaching no more than about 3 to 4 per cent per annum by 2005.

Although the change in government in May 1998 and the subsequent elections provide some political stability, some social unrest remains. This is kept under control. Nevertheless, there is some impact on tourism, as many potential tourists prefer to visit other countries they perceive to be safer.

Economic conditions in other parts of Asia improve faster than in Indonesia and return to near normal growth rates by 2002. This is of benefit to Indonesian tourism as the improving conditions in Asia encourage more travel, and the still depreciated exchange rate and abating inflation make Indonesia an attractive place to visit. In particular, there is slow improvement in the Japanese economy and this is an important development for the number of tourists visiting Indonesia and availability of investment.

High levels of poverty are a serious problem for the government. Because the government is focused on alleviating the immediate difficulties of the very poor and solving its exchange rate and inflation problems, it directs much of its resources to these issues and defers or cancels many infrastructure projects. It slows down its efforts to liberalise its trading environment and it becomes more difficult than it needs to be to import some equipment for the tourism and transport sectors. Constraints on the expansion of some tourism sectors restrict growth in the medium to longer term.

The domestic airlines continue to suffer financial difficulties, requiring assistance in restructuring debts and in the acquisition of spare parts. The government provides some of the necessary assistance as inter-island transport, especially in the eastern provinces, is a vital facility in holding the nation together. Because of the difficulties faced by domestic airlines, the government allows international air operators greater access to provincial airports. Growth in tourist numbers in eastern Indonesia is limited because of the transport difficulties.

Until real GDP returns to former levels, expenditure on human resource development, environmental protection, tourism promotion and new technology is muted. Expenditure on environmental protection and tourism promotion is thought to be insufficient, and this has a significant negative impact on the number of tourists visiting eastern Indonesia.

Optimistic scenario

There is restoration of economic health as the Indonesian government is successful in implementing the IMF program. The government

reforms the electoral system so that a new government is in place by the end of 1999 as promised. The new government is more unified than under the moderate scenario and is able to focus on reforms necessary to rebuild the economy. The new government is perceived to be separate from earlier governments and this assists in the restoration of investor confidence.

The IBRA works quickly to restructure the banking system. The financial markets react positively, but with some caution. Investor confidence returns to normal in 2000.

The lower-than-expected inflation result takes some pressure off the budget as subsidies for food need not be increased and in some cases are reduced. The increasing availability of food takes some of the pressure off the poorer sections of the community. The likelihood of social unrest almost disappears and political stability is maintained. There are still some sporadic outbursts of unrest, but these are generally small and easily controlled. Nevertheless, they have some impact on tourist numbers.

In 1999 the decline in GDP is halted, and in 2000 annual growth is in the range from 0 per cent to 3 per cent. GDP growth improves, reaching 5 per cent per annum in real terms by 2005, still below the levels achieved before the financial crisis. Inflation returns to normal levels by 2001. The exchange rate stabilises at between 6000 and 7000 rupiah to the US dollar by 2000.

Poverty is endemic and as a result the government focuses much of its attention on improving the economic conditions for the poorer sections of the community. This means some deferral of infrastructure projects as short-term poverty alleviation takes precedence.

Economic conditions in other Asian countries return to normal by 2001 and this, with the now stabilised Indonesian exchange rate, encourages increased tourism to Indonesia. Japan, in particular, recovers faster than expected and this assists both the recovery in tourist numbers and foreign aid and investment.

Political stability and the improving economy allow the government to maintain the pace of liberalising its trade laws and regulatory environment. Air service agreements also continue to allow increasing freedom for operators.

Domestic airline operators continue to face financial difficulties but government coordination efforts prevent the situation from deteriorating and ensure basic services are maintained. Until about 2001, route coverage is reduced in scope with limited service frequency. To overcome some of these problems, the government

increases access to provincial airports by international operators and allows some limited carriage of domestic passengers by international operators.

Regulatory reform allows new operators readily to enter the tourism and transport markets in eastern Indonesia. Innovation occurs and new facilities and markets are developed in the freer economic environment that now exists as a result of the IMF program.

Improving economic conditions take pressure off the environment and allow better monitoring of environmental conditions. The environmental record is less of an issue for potential tourists in this scenario.

The improved conditions also mean that expenditure on human resource development, tourism promotion and new technology is not unduly constrained. Tourist promotion is carefully focused on markets that research has shown can generate significant numbers of visitors to eastern Indonesia.

Pessimistic scenario

Economic recovery is much slower than expected and the implementation of the IMF program runs into difficulties. Some elements of the package are implemented, but vested interests either stall the implementation of other elements or develop methods to bypass them. The government has difficulty in responding to the depth of the problems in the banking system. As a result the financial markets react negatively. The rupiah loses ground against the US dollar, putting more pressure on weaker banks with US dollar loans. By 2000 the rupiah is still weak and is trading in the range 12 000 to 15 000 rupiah per US dollar.

The establishment of the new government is delayed until mid-2000. The new government is anything but unified as many inexperienced people are elected and many of these are elected on single-issue policies. The new government has difficulty introducing policies to improve economic conditions. Investor confidence remains weak.

The economy does not appear to be responding to the government's policies. Inflation increases and is still at around 50 per cent per annum by 2000. Interest rates also increase and many businesses fail, putting more people out of work. GDP contracts by 10 per cent in 1999. Growth in real GDP is not restored until 2001 at the earliest and even then is very low. Confidence in the financial system is not restored until 2003. Inflation and the exchange rate are not stabilised until 2003.

Food supply deteriorates and higher-than-expected inflation worsens this situation, increasing food prices to levels unaffordable to much of

TABLE 4.2 SUMMARY OF SCENARIOS

Driving force	*Optimistic*	*Moderate*	*Pessimistic*
External			
IMF reforms	Fully implemented	Some implemented	Either not implemented or bypassed
Investor confidence in financial and equity markets	Regained by 2000 after an initial decline	Some initial loss of confidence but regained by 2001	Confidence lost and not regained until 2003
Inflation in 1999	70 per cent	80 per cent	100 per cent
Exchange rates in 2000	6000 to 7000 Rp/US$	8000 to 10 000 Rp/US$	12 000 to 15 000 Rp/US$
Year when inflation brought under control	2001	2002	2003
Economic conditions in source countries for tourism	Conditions in source countries recover by 2002	Conditions in source countries recover more slowly with recovery to near normal by 2002	Recovery of economic conditions in source countries delayed until 2002–03.
Competing destinations	Competing countries have small negative effect on tourist numbers	Competing countries have some negative effect on tourist numbers	Competing countries have a large effect on tourist numbers
Trade liberalisation (eg APEC, WTO)	No change	Slows down	Becomes very slow
Aviation	Trend to more liberal environment continues. Gov't assists domestic operators by taking a coordinating role to help obtain spare parts and defer debts.	Some liberalisation. Assistance to domestic operators to obtain spare parts and defer debts	Trend to more liberal environment stalls. Domestic operators agree to share resources, but government unable to assist.

Continued on next page

TABLE 4.2 SUMMARY OF SCENARIOS (continued)

Driving force	*Optimistic*	*Moderate*	*Pessimistic*
Internal			
Perceptions	Unrest has some impact	Unrest has a significant effect on tourist numbers	Unrest has a large impact — many tourists deterred from visiting Indonesia
Recovery of GDP	1999 0% 2000 0%–3% 2005 5%	1999 –3% 2000 0% 2005 3%–4%	1999 –10% 2000 –5% 2005 1%–3%
New government established	Dec 1999	March 2000	Mid-2000
Expenditure on HRD	Limited reduction in short term. Returns to previous level in medium term.	Some reduction in short to medium term. Recovers in longer term.	Significant reduction for longer term.
Expenditure on tourism promotion	Limited reduction in short term. Returns to previous level in medium term.	Some reduction in short to medium term. Recovers in longer term.	Significant reduction for longer term.
Expenditure on environmental protection	Limited reduction in short term. Returns to previous level in medium term.	Some reduction in short to medium term. Recovers in longer term.	Significant reduction for longer term.
Introduction of appropriate technology	Limited reduction in short term. Returns to previous level in medium term.	Some reduction in short to medium term. Recovers in longer term.	Significant reduction for longer term.
Reform of regulations	Limited reduction in short term. Returns to previous level in medium term.	Some reduction in short to medium term. Recovers in longer term.	Significant reduction for longer term.

Source BTE analysis.

Impact on the driving forces

Table 4.4 displays the results of the project team's analysis of the likely impact of the scenarios on both the internal and external driving forces determining the total tourism impact.

The importance attached to economic recovery and the consequent levels and stability of exchange and inflation rates is reflected in both the large short- and long-term effects under the different scenarios. In the short term, these effects are assumed to have a positive impact on tourism under all three scenarios as real exchange rates continue to make Indonesia a cost-competitive destination. Under the optimistic scenario in the longer term the extent of this positive impact will be reduced as exchange and inflation rates stabilise, but will remain a positive influence on tourism to the region. Under the moderate scenario the exchange and inflation rate changes taking place will have no impact in the long term but under the pessimistic scenario a high inflation rate is likely to cause an adverse real exchange rate which may lead to a small negative impact on tourism numbers.

Under all scenarios, in both the short and long term, recent events in Indonesia have shown that perceptions of safety and security issues deter many tourists from visiting the country. Even in the optimistic scenario, tourism is predicted to decline in both the short and long term as a result of safety concerns. The perceived safety risks cause large declines in tourism in the short term under both the moderate and pessimistic scenarios and become entrenched in people's memories so that even in the long term a significant negative impact continues as unrest dissipates and political stability is restored. In all scenarios the impact of safety concerns on tourist numbers is less for Bali.

The economic conditions in source countries have a large short-term impact on tourism to eastern Indonesia. A significant and growing proportion of tourists visiting eastern Indonesia come from other Asian countries. The recent economic difficulties experienced in these countries will therefore adversely affect eastern Indonesian tourism to varying degrees under all scenarios. However, only under the pessimistic scenario will this impact continue to have a significant adverse effect in the longer term.

Not only are other Asian countries a source for tourism to eastern Indonesia, but they are also eastern Indonesia's major competitors. How well these countries recover from current economic problems will influence their ability to compete significantly in the short term. Under the optimistic scenario, conditions in these countries improve somewhat faster than in Indonesia so that there is a small negative impact in the short term but no long-term impact. In the moderate

TABLE 4.4 IMPACT OF THE SCENARIOS ON THE DRIVING FORCES

	Optimistic	*Moderate*	*Pessimistic*
External			
Exchange rates & inflation			
Short-term	25%	15%	10%
Long-term	5%	0%	-5%
Source countries			
Short-term	-10%	-15%	-20%
Long-term	0%	-3%	-5%
Competing destinations			
Short-term	-10%	-15%	-20%
Long-term	0%	0%	-5%
Investor confidence			
Long-term	-2%	-5%	-10%
Trade liberalisation			
Long-term	0%	0%	-2%
Air service agreements			
Long-term	0%	-2%	-5%
Internal			
Perceptions			
Short-term	-20%(-15%)	-25%(-20%)	-35%(-30%)
Long-term	-5%(-2%)	-10%(-5%)	-15%(-7%)
Promotion			
Short-term	20%	12%	5%
Long-term	10%	5%	0%
Environmental protection			
Short-term	-10%	-15%	-20%
Long-term	-2%	-5%	-10%
Domestic aviation			
Short-term	-10%	-15%	-20%
Long-term	0%	-5%	-10%
Human Resource Develop.			
Long-term	-2%	-5%	-8%
Appropriate technology			
Long-term	-2%	-5%	-8%
Regulatory reform			
bad times - good policy			
Long-term	2%	5%	10%
bad times - less reform			
Long-term	-2%	-5%	-8%
Total impact			
Short-term	-21% (-7%)	-50% (-37%)	-69% (-58%)
Long-term			
bad times - good policy	3%(6%)	-27% (-19%)	-54% (-44%)
bad times - less reform	-0.8%(2%)	-34% (-27%)	-61% (-53%)

Note Figures in brackets are for Bali.

Source BTE and R&D Agency analysis.

scenarios conditions in other parts of Asia improve considerably faster, so that Indonesian tourism suffers more in the short term. In the longer term, however, there is no impact on Indonesian tourism. Under the pessimistic scenario, recovery in these competing destinations is slower, but remains better than in Indonesia, resulting in a large short-term and small long-term adverse impact on eastern Indonesian tourism.

The remaining external factors will have longer term influences on tourism to eastern Indonesia. They are unlikely to have any short-term impact. Under all three scenarios, investor confidence in Indonesia is damaged. The lack of confidence has a small impact on tourism under the optimistic scenario, through declines in the provision of new tourism and transport infrastructure, but a considerable impact on tourism under moderate and pessimistic scenarios. Under the pessimistic scenario, trade liberalisation becomes low on the government's agenda, making the importation of equipment and other necessities difficult, therefore slowing the development of new tourism and transport infrastructure. Similarly, under the moderate and pessimistic scenarios the pressure to liberalise air service agreements is reduced and some negative tourism impact results.

The promotion and marketing of eastern Indonesia as a tourist destination is an important internal factor influencing the level of tourism. Government promotion efforts in eastern Indonesia are assumed to remain unaffected by current financial problems under all scenarios as the government has reaffirmed its commitment to the region.

Private sector promotional and marketing activities are highly sensitive to economic conditions and can have a large short-term impact on tourist numbers. In both the short and long term, this impact is assumed to be positive. Under the optimistic scenario, in an improved economic environment, increased promotional expenditure and better targeted promotion produce a large short- and long-term positive impact on tourist numbers. Under the moderate scenario, tourism promotion is constrained and the positive impact is reduced in the short term but recovers in the longer term. Under the pessimistic scenario the impact of promotional expenditure remains positive but is considerably less than other scenarios.

Indonesia's environmental protection record can have a significant short-and long-term impact on tourist numbers. Under all three scenarios the economic crisis reduces or constrains expenditure on the environment, causing adverse effects on tourism in both the short and

long term. Under the optimistic scenario the short-term impact on tourism is significant but becomes much smaller over the longer term.

Under the moderate scenario, expenditure on environmental protection is significantly constrained. The effects of this insufficient expenditure is a considerable impact on tourism numbers in the short term, with some lasting long-term influence. Reduced expenditure on environmental protection coupled with a slow recovery not only reduces Indonesia's ability to respond to environmental crises but also reduces its capacity to prevent future crises. The large number of eastern Indonesian tourist attractions that rely on natural attractions make this a critical factor in future tourism demand in the region.

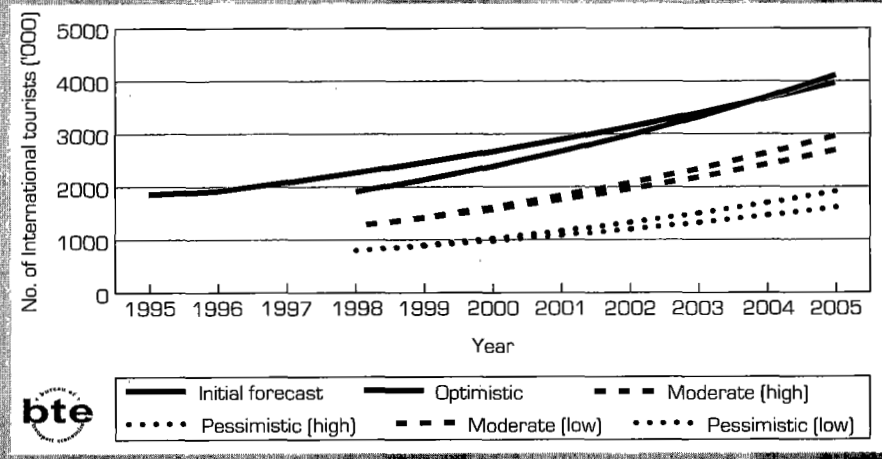
Under the pessimistic scenario, Indonesia's environmental record becomes even more crucial as expenditure is further reduced, environmental quality suffers, problems such as forest fires worsen and the ability to combat these difficulties is reduced. Perceptions of Indonesia's worsening environment discourage large numbers of potential tourists in the short term and have a significant impact over the longer term. As seen in late 1997 with the forest fires in Kalimantan, environmental issues, and in particular adverse publicity about them, can have a dramatic impact on tourism.

Financial difficulties experienced by Indonesia's domestic airlines can make it difficult for foreign tourists to travel within eastern Indonesia. In 1996, of the 1.9 million international visitors to eastern Indonesia, about 70 per cent entered Indonesia through an international airport in eastern Indonesia or visited the province of Nusa Tenggara Barat, which is easily accessible from Bali (Angkasa Pura I 1997, Table 4.3). The remaining 30 per cent of tourists visiting eastern Indonesia had to travel to their destination by domestic transport from the airport at which they arrived in Indonesia. Almost all of these would have travelled by air. These tourists are the ones that may not be able to travel to the eastern Indonesian destination of their choice if domestic airline operations are curtailed.

Under the optimistic scenario, the disruption to domestic aviation results in international tourism reducing by 10 per cent in the short term, but is not affected at all in the long term. The short-term reduction of 10 per cent is one-third of international tourists who arrive at one gateway and wish to travel to another destination in eastern Indonesia. In the moderate scenario, the reduction in international tourism is larger, reflecting the greater difficulty faced by domestic airlines. In the pessimistic scenario, two-thirds of international tourists who would have travelled on domestic airlines within eastern Indonesia under normal circumstances are unable to do so in the short term. In the

Tourist numbers to eastern Indonesia are severely affected under all scenarios in this analysis. Only under the optimistic scenario does tourism grow to exceed the initial forecast by 4.7 per cent. Under both the higher and lower moderate scenarios, tourism growth is substantially reduced and remains well below initial expectations in the longer term. Under the pessimistic scenario, tourism growth is drastically reduced and remains far below the initial forecast over the longer term.

FIGURE 4.4 IMPACT OF SCENARIO ASSUMPTIONS ON ESTIMATED TOURIST NUMBERS



Sources: BTE and R&D Agency estimates, based on Table 4.3 and Table 4.4.

5

AIR PASSENGER FORECASTS

The adequacy of aviation infrastructure in eastern Indonesia depends on the demands placed upon it in terms of the number of passengers and the number of aircraft movements at each airport. Chapter 4 provides an estimate of the number of international tourists visiting eastern Indonesia under the three scenarios. In addition to the international tourists visiting eastern Indonesia by air, domestic tourists and business travellers also place demands upon the aviation infrastructure.

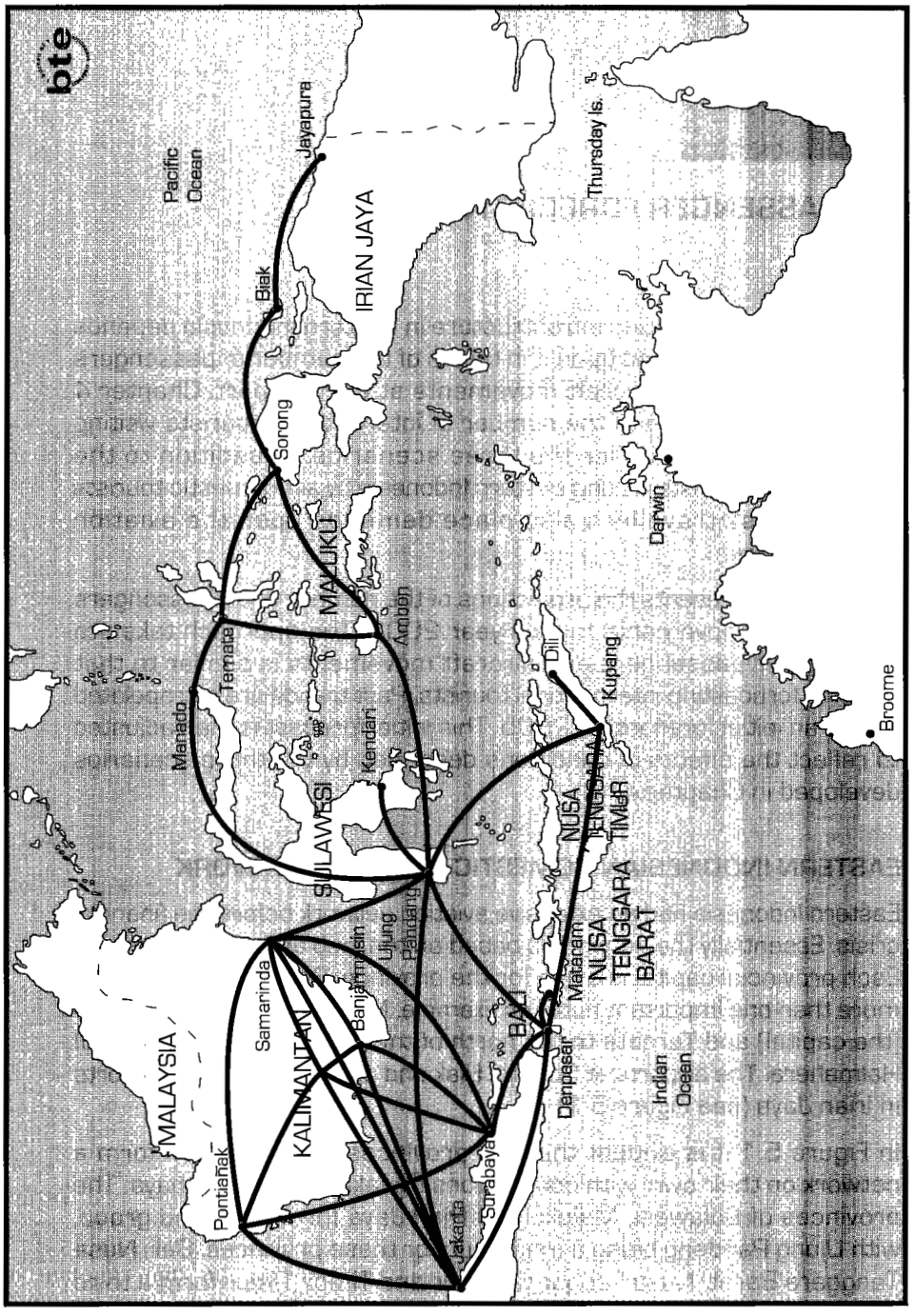
This chapter presents the projections of the number of air passengers and aircraft movements for the year 2005. The approach taken to forecast air passengers and aircraft movements is similar to that used for forecasting international tourists. Past trends are extrapolated to give an initial forecast for 2005. This initial forecast is then adjusted to reflect the effects of conditions described by the three scenarios developed in Chapter 4.

EASTERN INDONESIAN DOMESTIC AVIATION NETWORK

Eastern Indonesia had an extensive aviation network before the financial crisis. Essentially the network is based on the 'hub and spoke' concept. Each provincial capital is a hub for the province. Some provinces have more than one important hub. For example, Maluku has hubs at Ambon (the capital) and Ternate to the north of the province on the island of Halmahera. The airports at Sorong, Biak and Jayapura are hub airports in Irian Jaya (see Figure 5.1).

In Figure 5.1 it is evident that the provinces in Kalimantan form a network on their own, with connections to Jakarta and Surabaya. The provinces of Sulawesi, Maluku and Irian Jaya form a second group, with Ujung Pandang being a major hub for these provinces. Bali, Nusa Tenggara Barat, Nusa Tenggara Timur and Timor Timur form a third group, for which Denpasar is the major gateway.

FIGURE 5.1 MAJOR INTER-PROVINCE AVIATION LINKS IN EASTERN INDONESIA



Source Bandung Institute of Technology (1997b).

Because many of the routes in eastern Indonesia have low patronage, direct routes between cities that are not in adjacent provinces are not common. Journeys that are between non-adjacent provinces in eastern Indonesia typically require an intermediate stop, resulting in a large proportion of transit passengers at some airports. For example, in travelling from Jayapura to Denpasar during the field trip in December 1997, the project team stopped at Biak, Sorong, Ambon and Ujung Pandang. After Indonesia recovers from the financial crisis and the aviation system resumes growth, it can be expected that increased passenger numbers would lead to denser routes and greater opportunity for direct routes between non-adjacent provinces. The number of transit passengers would then decline as a proportion of total passengers.

THE INITIAL PROJECTIONS

Passenger forecasts

The project team was fortunate in that a forecast of inter-provincial passenger movements for the year 2005 was available (Bandung Institute of Technology 1997a). However, these forecasts were not comprehensive enough for our purpose. The forecasts were for inter-provincial movements of domestic passengers. As such, they did not include intra-provincial movements, international passengers or transit passengers (which for some airports were a large proportion of total passengers).

The origin destination data were estimated from information gained from a survey. Because surveys by their very nature are based on a sample of the population, there are errors in the results. Some errors in the inter-provincial data were very obvious and some amendments were needed to ensure the data were sensible. For example, the forecasts showed a total of 4.8 million passengers arriving in Jakarta and 8.5 million departing in 2005. Clearly such a major difference in arrival and departure numbers was implausible and certainly unsustainable. The BTE developed some separate forecasts for these airports and provinces using past trends, and used these as well as the ratios of arrivals to departures from the Directorate of Air Transport (1998) to estimate more plausible projections.

The data from which the origin destination data were produced were available in a more disaggregated form on a CD-ROM (Bandung Institute of Technology 1997b). The BTE developed an origin destination matrix for 1995 using these data, which included intra-province estimates. The intra-province information was projected to 2005 and added to the 2005 inter-province estimates.

The next step was to split the provincial totals into airport totals. The data published by the Directorate of Air Transport (1998) gave totals of arrivals and departures for both domestic and international passengers for a large selection of airports, as well as the number of transit passengers. The proportion of provincial arrivals and departures handled by each airport could be estimated from this information and these proportions were used to estimate individual airport totals for 2005 from the provincial estimates[9]. After this step, the total number of domestic arrivals throughout Indonesia did not equal the total number of departures. As this was unrealistic, the number of arrivals was adjusted so that the two totals were the same.

Intra-province passengers

With the addition of the intra-province information, the domestic origin-destination data were complete. It needed only the addition of international and transit passengers to complete airport projections. The data published by the Directorate of Air Transport (1998) were used to estimate the ratio of transit passengers to total arrivals and departures of non-transit passengers. An average of this ratio was estimated for 1996 and 1997 for each airport. The ratios were then used to estimate transit passengers for 2005. Using the average ratio for 1996 and 1997 for each airport for 2005 probably overstates the number of transit passengers for 2005 for the no-financial crisis forecast. As passenger numbers grow, it can be expected that the number of direct services between airports would also increase, thus reducing the need for transiting at intermediate airports.

International passengers

International passenger forecasts for 2005 were estimated in two ways. The first was to extrapolate the trends from 1994 to 1997. The growth rate for the period 1994 to 1997 was 8.6 per cent per annum. Applying this growth rate from 1997 to 2005 gave an estimated number of international air passengers arriving in Indonesia of 9.72 million. The period on which the projection was based is relatively short and extrapolation of the trends to the year 2005 cannot be expected to be reliable. An alternative method was used to give a second estimate.

9 The process was more complicated than this for some provinces with many airports (for example Irian Jaya) for which not all airports were represented in Directorate of Air Transport (1998) data. For these airports, information derived from Bandung Institute of Technology (1997b) was used to assist in disaggregating the provincial estimates.

The second approach used information in the National Tourism Development Master Plan (Euro Asia Management 1998a). The master plan contained an estimate of 9.349 million foreign visitors in 2004 and the estimated growth rate from 2004 to 2009 of 8.9 per cent in the more optimistic of the two hypotheses presented. Using these estimates gave the number of foreign visitors in 2005 as 10.18 million. However, not all foreign visitors arrive by air—some arrive by land and some by sea. The number of international air passengers in 2005 was estimated by taking the ratio of international visitors arriving in Indonesia in 1996 (5.036 million (Euro Asia Management 1998a, p. 58)) to the total number of passengers arriving by air (4.79 million (Directorate of Air Transport 1998)) and applying the ratio to the number of foreign visitors in 2005. This gave a total of 9.68 million in 2005. A figure of 9.7 million was adopted. The distribution of international passengers between airports was estimated using the average of the 1996 and 1997 distributions.

Transit passengers

Transit passengers were added to the number of passengers at each airport. The number of transit passengers in 2005 was estimated using the average of the ratio of transit passengers to the sum of arrivals and departures for 1996 and 1997.

Tourists and international passengers

A check was made between the estimated increase in tourism numbers in eastern Indonesia between 1995 and 2005 and the increase in international passengers arriving in eastern Indonesia over the same period. The number of international tourists was estimated to increase by 2 million and the number of international air passengers by 1.6 million. The discrepancy between the two estimates was too large. To overcome the discrepancy, the number of international air passengers arriving in eastern Indonesia was increased for Mataram, Ujung Pandang, Manado and Ambon. The reason for increasing passengers to these airports was that they are hub airports for regions where tourism development is likely to occur in the period examined. The increases reduced the discrepancy to around 100 000. The remaining difference is likely to be accommodated by international tourists entering eastern Indonesia via Western Indonesian airports or by non-air modes.

The forecasts for 2005 are shown in Table 5.1. The forecasts are the best the project team could develop with the data available. Because the data are subject to errors, the forecasts will also have errors larger

TABLE 5.1 INITIAL FORECAST OF AIR PASSENGER NUMBERS IN EASTERN INDONESIA, 2005

('000)

	Domestic		*International*		*Total*	
Province/airport name	*Dep*	*Arr*	*Dep*	*Arr*	*Dep*	*Arr*
Bali (DPS)	1 827	1 794	2 920	3 304	4 747	5 098
Mataram (AMI)	409	358	127	134	537	492
NTB other	63	59	0	0	63	59
Ende (ENE)	8	7	0	0	8	7
Kupang (KOE)	107	127	11	9	118	136
Labuan (LBJ)	8	7	0	0	8	7
NTT other	79	77	0	0	79	77
Dili (DIL)	134	107	0	0	134	107
Timor Timur other	4	3	0	0	4	3
Pontianak (PNK)	516	519	17	14	533	533
Ketapang (KTG)	32	27	0	0	32	27
Kal Barat other	12	12	0	0	12	12
Kal Tengah	190	174	0	0	190	174
Banjarmasin (BDJ)	569	590	0	0	569	590
Kal Selatan other	9	9	0	0	9	9
Balikpapan (BPN)	615	601	13	14	628	615
Kal Timur other	158	180	0	0	158	180
Manado (MDC)	280	295	125	125	405	420
Gorontalo (GTO)	26	27	0	0	26	27
Sul Utara other	4	4	0	0	4	4
Sul Tengah	247	233	0	0	247	233
Ujung Pandang (UPG)	1 840	1 994	220	217	2 061	2 211
Sul Selatan (other)	9	8	0	0	9	8
Sul Tenggarah	95	90	0	0	95	90
Ambon (AMQ)	212	200	11	11	223	211
Ternate (TTE)	47	53	0	0	47	53
Maluku other	2	2	0	0	2	2
Biak (BIK)	219	212	0	0	219	212
Jayapura (DJJ)	248	246	0	0	248	246
Irian Jaya (other)	167	177	0	0	167	177
Total	8 137	8 195	3 444	3 829	11 582	12 023

Note Passenger numbers include transit passengers.

Source BTE estimates based on Bandung Institute of Technology (1997a, b), Directorate of Air Transport (1998) and Euro Asia Management (1998a).

than those normally associated with forecasts. It is not possible to estimate the magnitude of the errors, except to say that the errors will be proportionately larger for the smaller airports and for airports where the base data were especially suspect (airports in Irian Jaya come into this latter category).

Aircraft movements

An estimate of aircraft movements is required to allow assessment of runway adequacy at each airport. The number of passengers carried per aircraft was estimated and then this information was used with the total number of passengers in 2005 to calculate the number of aircraft movements in 2005.

The number of passengers per aircraft was calculated as an average for the years 1996 and 1997 using data from the Directorate of Air Transport (1998). Separate averages were calculated for international and domestic movements.

The number of transit passengers was added to both arrivals and departures in calculating the average number of passengers per aircraft movement.

The number of aircraft movements in 2005 was then estimated by dividing the number of passengers in 2005 by the average number of passengers per aircraft estimated for 1996 and 1997. This is likely to overestimate the number of aircraft movements for 2005 because, as passenger numbers grow, there will be more opportunities for direct flights, thus reducing the number of transit passengers and increasing the possibilities of using larger aircraft on the more dense routes. However, there was insufficient information available to make any useful estimation of trends in numbers of passengers per aircraft. The results of the estimations are shown in Table 5.2.

IMPACT OF THE SCENARIOS

Effect on air passenger numbers

The conditions described in the scenarios in Chapter 4 will affect the number of air passengers in two ways. First, the number of tourists will be affected by the percentages shown in Table 4.4. In eastern Indonesia, international visitors almost all travel around the region by air. The reduction in tourist numbers indicated by the scenarios will be reflected in generally equal reductions in air passengers.

TABLE 5.2 INITIAL FORECAST OF AIRCRAFT MOVEMENTS IN EASTERN INDONESIA, 2005

	Passengers/movement		*Movements*		
Province/airport name	*Domestic*	*Internat.*	*Domestic*	*Internat.*	*Total*
Bali (DPS)	61	135	59 377	46 102	105 479
Mataram (AMI)	35	41	21 926	6 374	28 300
NTB other	5	0	24 321	0	24 321
Ende (ENE)	21	0	695	0	695
Kupang (KOE)	28	41	8 355	480	8 835
Labuan (LBJ)	16	0	935	0	935
NTT other	18	0	8 664	0	8 664
Dili (DIL)	60	0	4 029	0	4 029
Timor Timur other	13	0	525	0	525
Pontianak (PNK)	36	30	28 739	1 040	29 779
Ketapang (KTG)	9	0	6 568	0	6 568
Kal Barat other	5	0	4 921	0	4 921
Kal Tengah	18	0	20 195	0	20 195
Banjarmasin (BDJ)	51	0	22 730	0	22 730
Kal Selatan other	7	0	2 608	0	2 608
Balikpapan (BPN)	35	16	34 740	1 703	36 443
Kal Timur other	11	0	30 688		30 688
Manado (MDC)	43	38	13 367	6 586	19 953
Gorontalo (GTO)	20	0	2 666	0	2 666
Sul Utara other	9	0	962	0	962
Sul Tengah	40	0	12 014	0	12 014
Ujung Pandang (UPG)	63	90	60 868	4 855	65 723
Sul Selatan (other)	9	0	1 857	0	1 857
Sul Tenggarah	64	0	2 896	0	2 896
Ambon (AMQ)	33	8	12 500	2 727	15 227
Ternate (TTE)	17	0	5 929	0	5 929
Maluku other	8	0	537	0	537
Biak (BIK)	36	4	11 963	163	12 126
Jayapura (DJJ)	12	0	41 174	0	41 174
Irian Jaya (other)	11	0	31 251	0	31 251
Total	794	403	478 000	70 030	548 030

Source BTE estimates based on Bandung Institute of Technology (1997a, b), Directorate of Air Transport (1998) and Euro Asia Management (1998a).

Second, domestic travel will be affected by the economic conditions described in the scenarios. The reduction in aviation services throughout Indonesia in the wake of the financial crisis is evidence of this effect.

The information available to the project team was not sufficient to allow estimation of the relationship between domestic passenger numbers and the changed economic conditions that have developed as a result of the financial crisis. Instead, a simple approach was taken and the number of air passengers in eastern Indonesia was assumed to change by the same proportion as international tourist numbers.

It is not clear whether this assumption will result in an overestimate or an underestimate of the scenario impact. Eastern Indonesia is reported to have been less affected by the financial crisis than the western provinces. Eastern Indonesia, because of its underdevelopment, is less dependent on imports than the western provinces. Some industries dependent on exports in eastern Indonesia, such as mining, have become far more competitive following the devaluation of the rupiah and as a result may have generated increased travel. This would suggest that travel might also be less affected.

However, because of the financial crisis, many business people in western Indonesia would have reduced incomes and would not be able to afford to travel by air. Others who would normally visit friends and relatives would also be less able to travel by air due to reduced incomes. Many of those deterred from travelling by air may choose to travel by ferry or ship instead. This latter effect could result in changes larger than those estimated by the method adopted.

Table 5.3 shows the estimated impact on passenger numbers. Because of the method of estimation, the numbers for each scenario are directly related to the impacts in Table 4.4. The optimistic scenario impact is based on the 'bad times— good policy' approach and as such represents the maximum number of passengers under the scenarios developed in Chapter 4. The pessimistic scenario impact is based on the 'bad times— bad policy' approach and as such represents the worst possible outcome of the scenarios.

Effect on aircraft movements

Numbers of aircraft movements for each of the scenarios were calculated in the same way as for the 'no-financial crisis' case. That is, the number of passengers per movement calculated for 1996 and 1997 was used, in conjunction with the passenger numbers in Table 5.3, to calculate the number of aircraft movements for each scenario. The results of this procedure are shown in Table 5.4.

TABLE 5.3 EFFECT OF THE SCENARIOS ON AIR PASSENGER NUMBERS IN EASTERN INDONESIA, 2005

('000)

Province name	Initial forecast[a]	Optimistic	Moderate		Pessimistic
			Good policy	Bad policy	
Bali (DPS)	9 771	10 405	7 924	7 169	4 575
Mataram (AMI)	989	1 021	722	653	381
NTB other	101	104	73	66	39
Ende (ENE)	13	13	9	8	5
Kupang (KOE)	242	250	177	160	93
Labuan (LBJ)	12	12	9	8	5
NTT other	134	139	98	89	52
Dili (DIL)	242	250	176	160	93
Timor Timur other	7	7	5	5	3
Pontianak (PNK)	1 063	1 098	776	702	410
Ketapang (KTG)	52	54	38	34	20
Kal Barat other	17	17	12	11	6
Kal Tengah	356	368	260	235	137
Banjarmasin (BDJ)	1 109	1 144	809	732	427
Kal Selatan other	18	19	13	12	7
Balikpapan (BPN)	1 155	1 193	843	763	445
Kal Timur other	310	320	226	205	119
Manado (MDC)	817	844	597	540	315
Gorontalo (GTO)	42	43	30	28	16
Sul Utara other	7	7	5	5	3
Sul Tengah	443	457	323	293	171
Ujung Pandang (UPG)	3 324	3 431	2 426	2 195	1 280
Sul Selatan (other)	17	17	12	11	6
Sul Tenggarah	185	191	135	122	71
Ambon (AMQ)	375	388	274	248	145
Ternate (TTE)	100	103	73	66	38
Maluku other	4	4	3	3	2
Biak (BIK)	310	320	227	205	120
Jayapura (DJJ)	493	509	360	326	190
Irian Jaya (other)	343	354	250	227	132
Total	22 053	23 084	16 888	15 280	9 306

a. The numbers in this column are equal to the sum of arrivals and departures in Table 5.1 minus the number of transit passengers.

Source BTE estimates based on Bandung Institute of Technology (1997a, b), Directorate of Air Transport (1998) and Euro Asia Management (1998a), Table 4.4.

TABLE 5.4 EFFECT OF THE SCENARIOS ON AIRCRAFT MOVEMENTS IN EASTERN INDONESIA, 2005

Province/ airport name	*Initial forecast*	*Optimistic*	*Moderate*		*Pessimistic*
			Good policy	*Bad policy*	
Bali (DPS)	105 479	112 325	85 538	77 392	49 388
Mataram (AMI)	28 300	29 215	20 655	18 688	10 900
NTB other	24 321	25 107	17 751	16 061	9 367
Ende (ENE)	695	717	507	459	267
Kupang (KOE)	8 835	9 120	6 448	5 834	3 403
Labuan (LBJ)	935	965	683	618	360
NTT other	8 664	8 943	6 323	5 721	3 337
Dili (DIL)	4 029	4 159	2 941	2 661	1 552
Timor Timur other	525	542	383	347	202
Pontianak (PNK)	29 779	30 741	21 735	19 665	11 469
Ketapang (KTG)	6 568	6 780	4 794	4 337	2 530
Kal Barat other	4 921	5 081	3 592	3 250	1 896
Kal Tengah	20 195	20 848	14 740	13 336	7 778
Banjarmasin (BDJ)	22 730	23 465	16 590	15 010	8 755
Kal Selatan other	2 608	2 692	1 904	1 722	1 004
Balikpapan (BPN)	36 443	37 620	26 598	24 065	14 036
Kal Timur other	30 688	31 680	22 398	20 265	11 820
Manado (MDC)	19 953	20 598	14 563	13 176	7 685
Gorontalo (GTO)	2 666	2 752	1 946	1 761	1 027
Sul Utara other	962	993	702	635	371
Sul Tengah	12 014	12 402	8 769	7 934	4 627
Ujung Pandang (UPG)	65 723	67 845	47 968	43 400	25 313
Sul Selatan (other)	1 857	1 917	1 355	1 226	715
Sul Tenggarah	2 896	2 989	2 113	1 912	1 115
Ambon (AMQ)	15 227	15 719	11 113	10 055	5 864
Ternate (TTE)	5 929	6 120	4 327	3 915	2 283
Maluku other	537	555	392	355	207
Biak (BIK)	12 126	12 518	8 850	8 008	4 671
Jayapura (DJJ)	41 174	42 505	30 051	27 189	15 858
Irian Jaya (other)	31 251	32 261	22 809	20 637	12 037
Total	548 030	569 174	408 538	369 634	215 588

Source BTE estimates based on Bandung Institute of Technology (1997a, b), Directorate of Air Transport (1998) and Euro Asia Management (1998a), Table 4.4 and Table 5.3.

Summary of the scenario impact

Overall, the optimistic scenario results in a small increase in both passenger numbers and aircraft movements by 2005. In contrast, the pessimistic scenario results in a massive decrease in passenger numbers and aircraft movements by 2005. The results depend very much on the assumptions—both in developing the scenarios and in carrying over the scenario impacts to passengers and aircraft movements. Although there will be errors resulting from the procedure used to estimate the effect of the scenarios on passenger and movement numbers, these errors will be small when compared with those arising from the scenarios themselves. The process of developing the scenarios involved the assessment of a complicated set of interacting factors. The relationship between the factors and tourism is uncertain in an environment where the economic and political parameters have changed greatly during the financial crisis.

In terms of assessing the adequacy of the air transport infrastructure, it is the number of passengers and aircraft movements under the optimistic scenario that is of interest. The adequacy of the infrastructure is taken up in the next chapter.

6

ASSESSMENT OF THE AVIATION INFRASTRUCTURE

Assessment of the aviation infrastructure is essentially an assessment of whether the infrastructure needs to be upgraded or replaced during the study period. The assessment hinges on a measurement of the infrastructure's capacity and what capacity is required to meet expected demands. Measurement of capacity is not an easy task, as 'capacity' can be defined in a variety of ways.

All infrastructure has an upper limit to its capacity, at which point it becomes incapable of accepting any more demands. Long before this point is reached, the service provided by the infrastructure deteriorates to an unacceptable level. Congestion can occur, delays can be experienced and operating costs increase. Infrastructure can become inadequate because it has become technically obsolescent or because it has deteriorated physically (National Transport Planning Task Force 1995, p. 2).

Increasing the capacity of a piece of infrastructure that is assessed as being inadequate does not always require its enlargement or replacement. For some pieces of infrastructure more appropriate pricing or more efficient operating procedures might result in improved service and might delay the need for new infrastructure investment.

The decision to invest in new infrastructure is essentially an economic one in which the costs of the infrastructure are compared with the benefits deriving from the investment, such as reduced congestion, improved reliability or lower operating costs[10]. Such a cost–benefit approach requires a large amount of data if reliable results are to be achieved. The project team was not in a position either to collect the data or to undertake the necessary analyses.

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10 See BTCE 1994, pp. 6–12 for a discussion on the economic assessment of infrastructure adequacy.

The project team followed the approach of the then BTCE in its assessment of Australian transport infrastructure and used a technical measure of capacity. The BTCE defined technical adequacy as:

> A piece of infrastructure is deemed to be technically adequate if its physical or performance characteristics are above minimum acceptable levels (BTCE 1994, p. 6).

What constitutes an acceptable minimum level of airport performance is a matter of judgement. However, it should be related as much as possible to the economic method of assessment. That is, the technical assessment should be a useful guide to those airports that warrant further examination as possible candidates for expansion.

Care needs to be taken in translating minimum acceptable technical levels of service of Australian infrastructure to Indonesian conditions. Although the principles of technical assessment remain the same regardless of location, the level of service deemed acceptable can differ. The difference can arise because of the desirability of aligning the technical standards with economic criteria for infrastructure expansion. It is the economic criteria that are likely to differ from country to country.

In addition to these considerations is the need to provide a safe transport system. The safety consideration can become the factor that defines technical adequacy, and safety criteria in aviation do not differ to the same degree between nations as economic criteria. For example, safety factors are more likely to define runway capacity than economic criteria.

The remainder of this chapter develops these issues further in the context of eastern Indonesia.

RUNWAY CAPACITY

There are five main factors that define runway capacity (Poldy 1982, pp. 9–10).

1. Separation standards

Separation standards define the time or distance that must be maintained between aircraft using the airport. The principle guiding separation standards is that only one aircraft can use the runway at a time. Each aircraft landing or taking off must have the runway ahead of it clear of other aircraft. The requirement is a safety consideration so that aircraft have the maximum room for evasive action if problems occur.

Under good weather conditions, aircraft operate under visual flight rules (VFR) and have more flexibility than under poor weather conditions, when they operate under instrument flight rules (IFR). Separations achieved are likely to be smaller under VFR than under IFR (Poldy 1982, p. 9).

2. Aircraft characteristics

The weight and speed of the aircraft determine runway occupancy. The speed determines how long the runway will be occupied and the weight is important if wake turbulence separation is required (Poldy 1982, p. 9)[11].

3. Runway configuration

An important characteristic of airport configuration influencing runway capacity is the location of exit taxiways. These determine how long a landing aircraft will occupy the runway. Separation between runways and the location of intersecting runways are important factors in airport capacity for multi-runway airports (Poldy 1982, p. 9). However, the location of other runways is not an issue in eastern Indonesia as airports in the region generally have only one runway.

4. Movement mix

A mix of aircraft of different weight categories can affect airport capacity, as light aircraft may have to wait to comply with wake turbulence separation standards if the preceding aircraft is in the heavy category. The speed of aircraft determines the time the runway is occupied and the time required between aircraft movements to maintain separation standards on the approach and departure paths (Poldy 1982, p. 14).

5. Air traffic control strategies

Air traffic control strategies—such as the choice of runway operating mode, priority given to movements of different types, and decisions on whether to treat movement requests on a 'first come, first served' basis or to alternate landings and take-offs—can affect runway capacity (Poldy 1982, p. 10).

11 Wake turbulence is the air turbulence behind airborne aircraft associated with the aerodynamics of aircraft wings. Wake turbulence was recognised as a serious problem following the introduction of wide-bodied heavy aircraft. Wake turbulence becomes a problem if a lighter aircraft follows a heavy aircraft too closely. Wake turbulence separation is designed to avoid this problem.

Benchmark capacities

Runway capacity depends on technical factors or standards (for example, separation standards) that are widely accepted throughout the world for safety reasons. Capacity of a runway in one country should be similar to the capacity of a runway of similar configuration in another country. If this is so, then the capacity of a runway in eastern Indonesia can be estimated using techniques developed for other countries.

Poldy (1982) developed a model of runway capacity that used the factors described above. However, for eastern Indonesia much of the data required for the model were not available. Instead, the project team examined estimated capacities of single-runway airports to provide an estimate of the capacity of eastern Indonesian airports.

The capacity of a single runway estimated by the then Australian Civil Aviation Authority and quoted by the BTCE (1994, p. 15) was in the range of 30 to 36 movements per hour under IFR and 36 to 40 movements per hour under VFR. Although not stated, the range in quoted capacity appears to be a practical estimate of capacity rather than a purely technical estimate of capacity. The upper capacity of 40 movements per hour would be the practical capacity under good conditions and with an appropriate configuration of exit taxiways. The benchmark capacity of 40 movements per hour was verified using data in Poldy (1982) for typical inter-movement times and a range of aircraft mixes representative of eastern Indonesia.

This then provides a convenient benchmark for assessing the runway capacity of eastern Indonesian airports. Runways with significantly less than 40 movements per hour can be assessed as having ample runway capacity. Runways with anticipated peak-hour movements close to 40 will need closer assessment to determine the appropriate means of accommodating the estimated number of movements. For airports with peak-hour movements close to 40 per hour, some delays can be expected. Expansion of capacity becomes an economic issue of trading off the costs of expanding the capacity against the benefits of reduced delays.

Estimating hourly movements

Peak-hour aircraft movements were available for the 12 major airports administered by Angkasa Pura 1 (1997). A regression equation was fitted to these data to allow estimation of peak-hour movements at other airports in eastern Indonesia. The equation is:

$$\text{Movements per peak hour} = 4.88 + 0.00037 \times \text{Annual movements} \qquad (1)$$

A graph of the original data and the estimated aircraft per peak hour is shown in Figure 6.1. Equation 1 was used to convert forecast annual movements for 2005 to peak-hour movements.

Results

Estimates of peak-hour aircraft movements were calculated for 2005 under the optimistic scenario. Numbers of movements under this scenario will be greater than under the other scenarios. If one of the other scenarios is a more accurate description of future developments, then the movements in Table 6.1 will occur at some time later than 2005.

Although Table 6.1 contains estimates for only a small proportion of eastern Indonesian airports, the airports not included generally have fewer peak-hour movements than the ones included. The estimated peak-hour aircraft movements of all but one of the eastern Indonesian airports included in Table 6.1 are comfortably below the benchmark of 40 per hour.

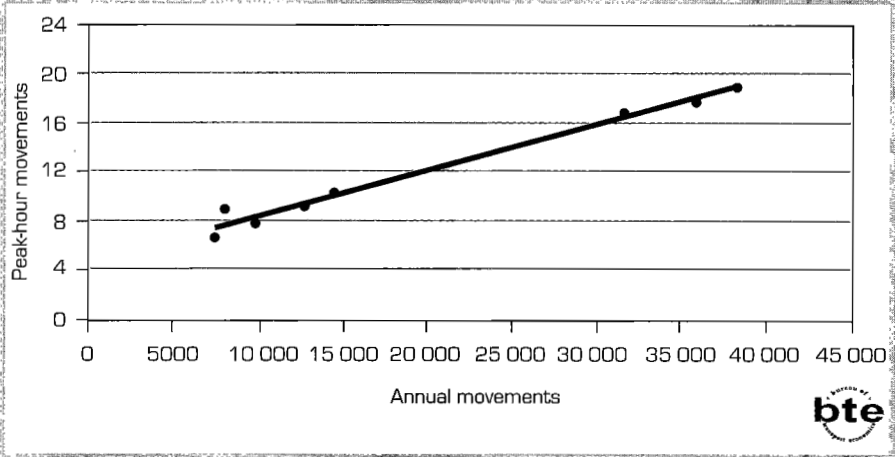
TABLE 6.1 ESTIMATE OF PEAK-HOUR AIRCRAFT MOVEMENTS AT SELECTED EASTERN INDONESIAN AIRPORTS, 2005

Airport name	*Annual movements*	*Hourly movements*
Bali (DPS)	112 325	39
Mataram (AMI)	29 215	17
Ende (ENE)	717	5
Kupang (KOE)	9 120	8
Labuan (LBJ)	965	5
Dili (DIL)	4 159	6
Pontianak (PNK)	30 741	16
Ketapang (KTG)	6 780	7
Banjarmasin (BDJ)	23 465	17
Balikpapan (BPN)	37 620	18
Manado (MDC)	20 598	28
Gorontalo (GTO)	2 752	6
Ujung Pandang (UPG)	67 845	34
Ambon (AMQ)	15 719	11
Ternate (TTE)	6 120	7
Biak (BIK)	12 518	11
Jayapura (DJJ)	42 505	21

Note Estimates are based on the optimistic scenario (see Chapter 4).

Source BTE estimates based on Equation 1, Bandung Institute of Technology (1997a, b), Directorate of Air Transport (1998) and Euro Asia Management (1998a).

FIGURE 6.1 RELATIONSHIP BETWEEN ANNUAL AND PEAK-HOUR AIRCRAFT MOVEMENTS IN EASTERN INDONESIA



Source BTE estimates based on Angkasa Pura 1 (1997), Directorate of Air Transport (1998).

The one exception is Bali, which has an estimated 39 movements in the peak hour during 2005 under the optimistic scenario. As mentioned in the previous chapter, the estimated number of aircraft movements is more likely to overstate than to understate the number. Nevertheless, the estimates suggest that runway capacity at Bali will need to be carefully managed during the coming decade to avoid aircraft delays.

There are several proposed projects to extend runways in eastern Indonesia. Proposals include Sorong, Pontianak, Samarinda and Ujung Pandang. The expansion of Ambon airport, currently in progress, includes an extension of the runway to 2500 metres, and funding has been approved for an extension of the runway at Manado to 2650 metres.

The project team was advised that the reason for extending runways at provincial capitals was to implement a policy that all provincial capitals should be accessible by B737 or equivalent aircraft. Safety was the reason given for the Ujung Pandang project, and this also had some bearing on the need for new construction at Samarinda and Pontianak.

The analysis of runway capacity suggests that runway construction at these airports is not required for traffic reasons. The proposal to construct a new airport at Samarinda can also be questioned on economic grounds. Balikpapan, which is relatively close to Samarinda, has a more than adequate airport. If the road between Samarinda and Balikpapan were upgraded, travel times between Balikpapan airport

and Samarinda could be reduced to possibly less than an hour, according to anecdotal evidence. An improved road would very likely be more beneficial to the local community than a new airport at Samarinda and would cost less than a new airport.

In view of the financial crisis, the Ministry of Communications has deferred construction of those projects that have not yet begun. The findings of the analysis for this study support that decision.

TERMINAL CAPACITY

Unlike runway capacity, terminal capacity depends to a large extent on conditions within a country. For example, standards that determine the area of a terminal in Australia are not necessarily appropriate to Indonesian conditions. Domestic air travellers in Australia and other developed countries are generally wealthier than domestic air travellers in eastern Indonesia. Air travellers in developed countries are therefore more likely to look for retail outlets in airport terminals than their counterparts in less developed countries. As a result, less space in terminals would be needed for retail shops in eastern Indonesian terminals compared with Australian terminals.

Another consideration is that the higher labour costs in Australia and other developed countries make it more attractive to install labour-saving equipment to handle passengers' baggage. The capital equipment is likely to require more space than the simpler facilities required for a purely manual system. Similar arguments can be developed for other aspects of terminal design.

The foregoing suggests that relationships between passenger numbers and terminal space developed for Australian conditions are not relevant to assessing space requirements in eastern Indonesia. However, a similar approach to developing the relationship can produce useful results.

Relationship between passenger numbers and terminal area

The BTCE (1994) developed two relationships for international terminals in its work for the National Transport Planning Task Force. One relationship was for new terminals and this relationship represented terminals that have a high space per passenger and thus room for expansion of passenger traffic. The second relationship was for terminals that were considered to be at working capacity.

The BTCE (1994) relationships were based on annual passenger numbers, but terminal capacity is more accurately a function of peak-

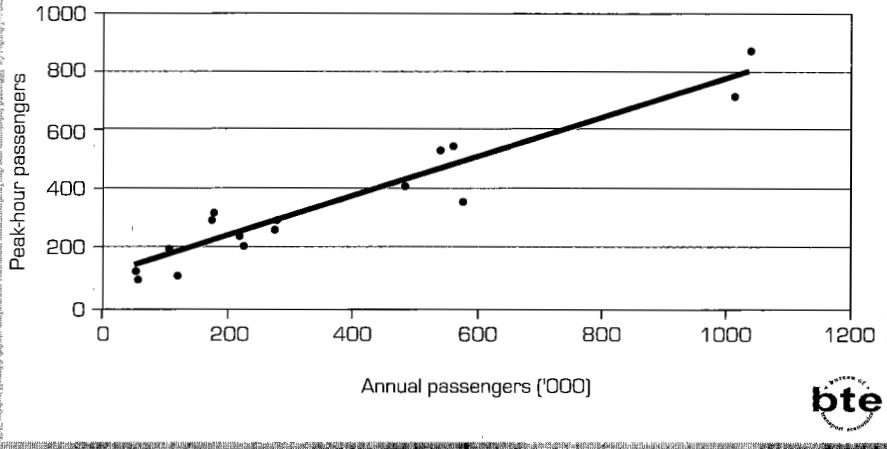
hour passenger numbers. The project team modified the BTCE (1994) approach and developed a relationship between annual passenger numbers and peak-hour passenger numbers using data in Angkasa Pura 1 (1997) of peak-hour passenger numbers for airports under the administration of Angkasa Pura 1.

The estimated relationship is:

Passengers per peak hour = 100.12 + 0.00068 x Annual passengers (2)

The relationship is also plotted in Figure 6.2. The relationship was used to estimate the peak-hour passenger numbers for the larger eastern Indonesian airports for which actual peak hour data were not available.

FIGURE 6.2 RELATIONSHIP BETWEEN ANNUAL AND PEAK-HOUR PASSENGERS IN EASTERN INDONESIA

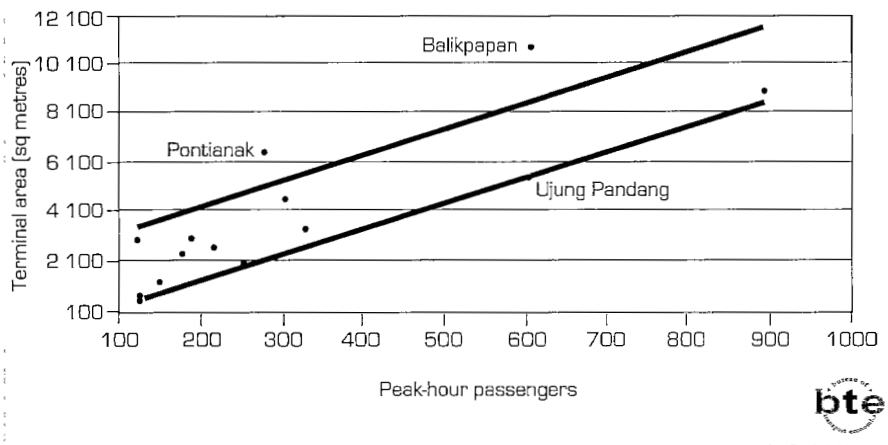


Source BTE estimates based on Angkasa Pura 1 (1997), Directorate of Air Transport (1998).

Airport areas were plotted against peak-hour passenger numbers and, in a process similar to that used by the BTCE (1994), equations were estimated that defined the envelopes of the data. A lower straight line was fitted through data for Ternate and Ujung Pandang (see Figure 6.3). The lower line would give a rough estimate of the area at which congestion would become apparent. It is a rather arbitrary limit as it merely provides a lower fit to the envelope of data available to the project team. Nevertheless, it provides some guide to the likely existence of terminal congestion.

The upper line in Figure 6.3 is parallel to the lower line at a distance 3000 square metres above it. The upper line, which has all but two terminals below it, can be interpreted as representing a minimum area

FIGURE 6.3 TERMINAL AREA AND PEAK-HOUR PASSENGER NUMBERS IN EASTERN INDONESIA, 1996



Source **BTE estimates based on Directorate of Air Transport (1998), Directorate of Air Transport pers. comm. 1998.**

for a new or expanded terminal. Terminal expansion design would need to take account of the specific circumstances of the airport.

The lower and upper lines are described by the following equations, which give terminal area in square metres:

Terminal area (lower) = −700 + 8.5 x Peak-hour passengers [3]

Terminal area (upper) = 2300 + 8.5 x Peak-hour passengers [4]

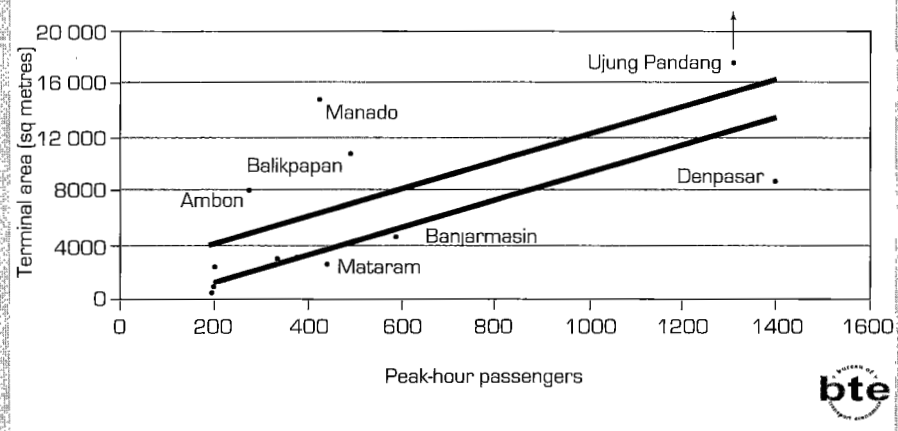
Equation 4 is simply equation 3 with 3000 added to it.

Terminal capacities in 2005

Peak-hour passenger numbers were estimated for the year 2005 using the ratio of 1996 peak-hour passengers to annual passengers for airports for which 1996 peak-hour data were available. For other airports, equation 2 was used. The estimated peak-hour passenger flows were plotted against the terminal area expected in 2005 as well as the two lines given by equations 3 and 4. The results are shown in Figure 6.4.

The results suggest that terminals at Ternate, Ketapang, and Mataram may need expansion by 2005 if the optimistic scenario is a reasonable description of the future and Biak and Banjarmasin could be close to capacity. The project team was advised that the domestic and international terminals at Denpasar were to be rearranged, resulting

FIGURE 6.4 TERMINAL AREA AND PEAK-HOUR PASSENGER NUMBERS IN EASTERN INDONESIA, 2005



Source BTE estimates based on Directorate of Air Transport (1998), Directorate of Air Transport pers. comm. 1998.

in an increase in area for the domestic terminal. If there is no increase in area, the domestic terminal at Denpasar will also require expansion by 2005.

The terminal at Ujung Pandang is expected to be replaced, with construction to commence in the near future. At the time of writing (September 1998) the area of the new terminal was uncertain, but probably more than the area shown in Figure 6.4.

Ambon and Manado are above the upper line, reflecting increased area following the construction of new terminals at those airports.

Terminals lying between the two lines can be considered as having a satisfactory area under current conditions. The relationship between annual and peak-hour passenger flows might be very different for airports other than those upon which equation 2 was based. The analysis here can only give an indication of which airports may need consideration for expansion by 2005. A more detailed analysis would be required before any decision is taken to proceed with an expansion or construction of a new terminal.

The results are based on existing service quality. International tourists visiting eastern Indonesia in the future may expect passenger terminals to have higher quality than presently provided. In that case, Biak and Banjarmasin will be more likely to require expansion and Gorontalo, Kupang and Jayapura would also be candidates for upgrading.

If the relationship used by the BTCE (1994) had been used to evaluate the adequacy of the airport terminals in eastern Indonesia, it would have been found that most of them would have needed expansion. This illustrates that imposing standards appropriate to Australia or other developed countries would have produced inappropriate results.

SUMMARY

In general, the analysis has indicated that, under the optimistic scenario, airport runways in eastern Indonesia can handle the traffic likely to be demanded of them in 2005. Denpasar is one possible exception that may need careful management of runway capacity. Under the optimistic scenario, most airport terminals have adequate capacity as long as planned expansions take place. Ternate, Ketapang, Mataram (even after the planned expansion to 2528 square metres), Banjarmasin and Denpasar terminals may need expansion according to the BTE's analysis.

7

ISSUES

The main focus of the report so far has been on forecasts of tourist numbers and air passenger numbers and the impact of these on the transport infrastructure. However, there are a number of other issues that are important to the development of tourism and the associated transport infrastructure in eastern Indonesia. The development of the scenarios in Chapter 4 indicated a number of issues that can affect tourism demand and hence demand for aviation services in eastern Indonesia. For example, perceptions of personal safety can have a profound effect on people's willingness to travel to the region.

The project team developed a survey of Australian travel agents to explore some of these issues. This chapter reports on the survey and discusses a number of issues not covered by the survey.

SURVEY OF TRAVEL AGENTS

The survey was designed to obtain information on the perceptions travel agents and their clients have of Indonesia and the knowledge they have of eastern Indonesia.

In mid-1998 the Indonesian government initiated a promotional campaign to encourage tourists to visit Indonesia. The promotion, entitled 'Let's Go Indonesia' was an attempt to increase foreign exchange earnings during the depth of the financial crisis. An early part of the promotion involved a 'Happy Day' that provided tourists with free accommodation and travel awards. The survey included a question that asked about travel agents' awareness of the promotion.

A total of 200 survey forms were mailed to travel agents throughout Australia in August 1998. The geographic distribution was as follows.

- Sydney 40
- Melbourne 40

- Brisbane 20
- Townsville and Cairns 20
- Darwin 20
- Perth 20
- Adelaide 20
- Canberra 20

A reminder letter was sent about a week before the final date for responses. A telephone follow-up was used to obtain further responses after the final date had passed. The final response rate was 32 per cent, with a response rate of at least 25 per cent from each region.

Results of the survey

Surveys have limitations. Biases can occur through the construction of the sample, the wording of the questions asked and through potential differences in the opinions of those responding to the survey and of those not responding to the survey.

The sample selected for the BTE survey was drawn at random from the travel agents advertising in the Yellow Pages. Travel agents that clearly did not include Indonesia in their sales were excluded from the sample and other agents selected at random to restore the sample size. There could be bias in the sample as it is not known how much the agents in the final sample knew about Indonesia and therefore how well informed they were about the topics the BTE sought information about.

Every effort was made to avoid bias in the questions, although this is no guarantee that the respondents were not influenced one way or the other by the wording of the questions. A copy of the survey form is in Appendix X.

The difference between respondents and non-respondents was overcome by following up non-respondents and recording their answers over the telephone. There is a possibility that the non-respondents had views that differed from the respondents. The answers of the two groups were compared and tested statistically to test for differences. Three questions (see the comments on questions 5, 7 and 9) showed significant differences in the answers of the two groups.

Question 1

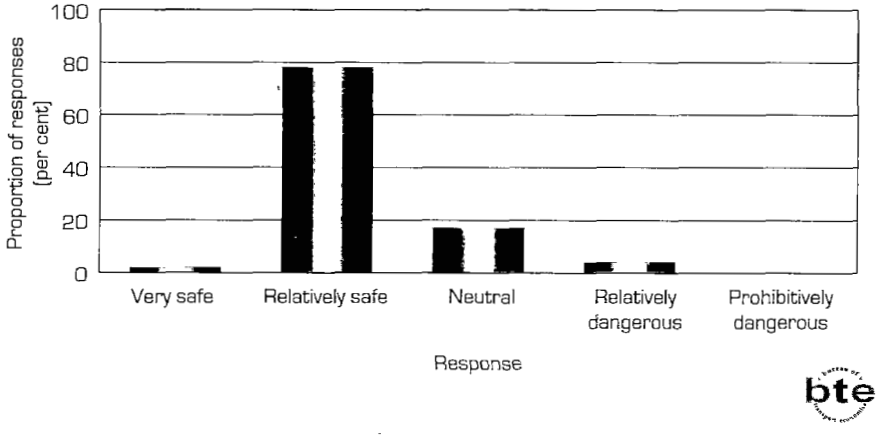
The first question asked travel agents what advice they would give on personal security in Indonesia. Just over 80 per cent said they would advise that Indonesia was relatively or very safe and a further 15 per cent said they would be neutral on this issue. Only four per cent thought Indonesia was relatively dangerous (see Figure 7.1).

For Australian travel agents, Bali is the dominant Indonesian destination. The answers to this question are very likely to reflect the views of personal safety in Bali rather than Indonesia as a whole. Even during the height of the civil disruptions in May 1998, the Australian Department of Foreign Affairs and Trade excluded Bali from its advisory notice to travellers.

Question 2

Travel agents were asked if their general advice about personal security would differ for specific areas of Indonesia, especially eastern Indonesia. Some respondents gave general comments such as the advice depends on the traveller and where the traveller intends to go. Specific areas mentioned as being less safe than their general advice might suggest included principally Jakarta, East Timor and Irian Jaya.

FIGURE 7.1 TRAVEL AGENTS' ADVICE ON PERSONAL SAFETY IN INDONESIA



Source BTE survey of travel agents.

Question 3

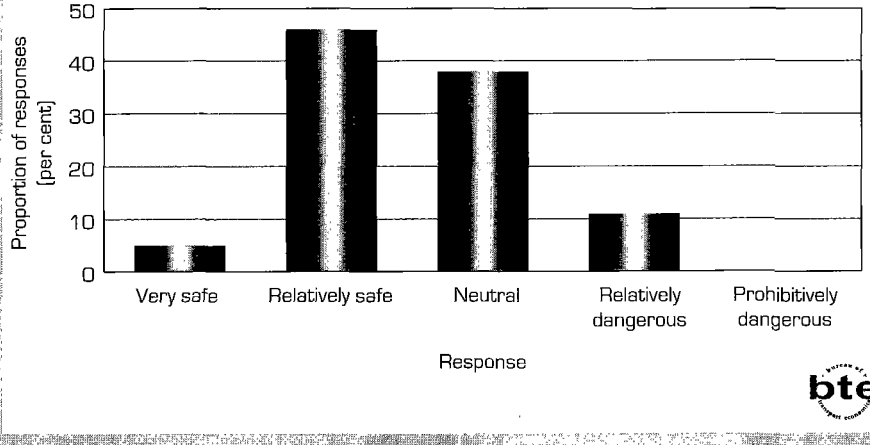
The perceptions of travellers might differ from that of travel agents. Question 3 asked travel agents what their impression was of their clients' perception of personal safety in Indonesia. Thirty-nine per cent of travel agents reported that their clients' perception of personal safety in Indonesia was less than that of the agents themselves. A comparison of Figure 7.1 and Figure 7.2 also illustrates this point.

It is not surprising that the perceptions of travel agents and their clients differ. It is a reasonable assumption that travel agents are better informed than their clients are about conditions in potential destinations of their clients. If the responses to questions 1 and 3 are an accurate reflection of the perceptions of travel agents and their clients, then promotional activities that provide an accurate picture of personal safety could help stimulate demand.

Questions 4 and 5

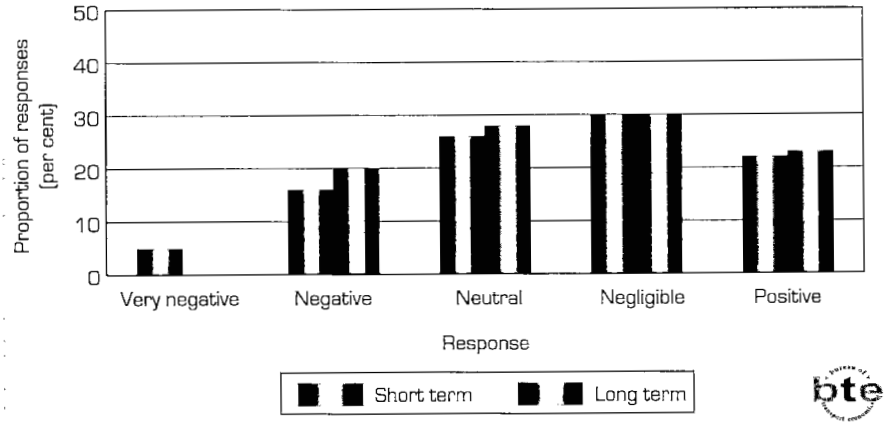
These questions sought the views of travel agents on the impact of the economic crisis on tourism to Indonesia. Question 4 asked for their views on the short-term response and question 5 on the long-term response. The responses did not differ greatly between the short- and long-term expectations. Figure 7.3 illustrates this. Most thought there would be some positive impact. In the short term, 21 per cent thought there would be a negative or very negative impact and this proportion

FIGURE 7.2 TRAVELLERS' PERCEPTIONS OF PERSONAL SAFETY IN INDONESIA, ACCORDING TO TRAVEL AGENTS SURVEYED



Source BTE survey of travel agents.

FIGURE 7.3 TRAVEL AGENTS' EXPECTATIONS OF IMPACT OF ECONOMIC CRISIS ON TOURISM



Source BTE survey of travel agents.

declined marginally to 20 per cent for the long-term impact. In contrast, 52 per cent thought the impact would be negligible or positive for both the short term and the long term.

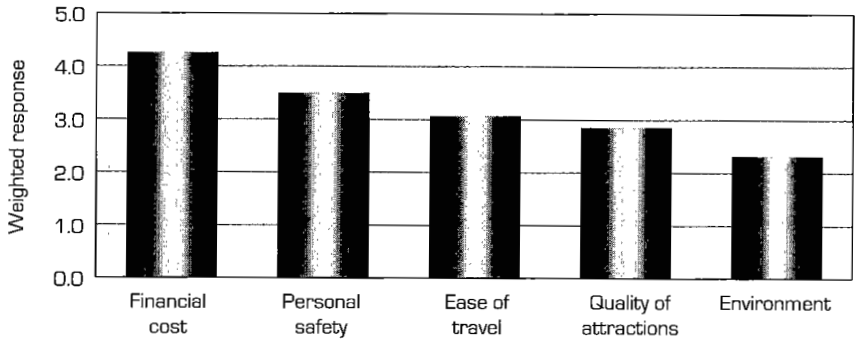
Non-respondents contacted by telephone gave significantly different answers to question 5 compared with the respondents. Only 13 per cent of the respondents thought the long-term impact would be positive compared with 39 per cent of non-respondents. Non-respondents were divided in their response, with 26 per cent believing the long-term impact would be negative compared with 16 per cent of respondents. It is not obvious why the difference in responses occurred.

Question 6

Question 6 sought information on the factors that potential tourists would consider when contemplating a trip to Indonesia. Financial cost was considered to be the most important factor, with personal safety the second most important. The number of responses listing financial cost as either first or second in order of importance was 87 per cent of the total, compared with 56 per cent listing personal safety as first or second (see Figure 7.4).

The environment was ranked last in importance. A possible explanation is that there were no major environmental issues in Indonesia that were making international media news at the time the survey was conducted (August 1998). Under those circumstances it is less likely

FIGURE 7.4 IMPORTANCE OF FACTORS INFLUENCING DECISION TO TRAVEL TO INDONESIA



Note The higher the weighted response, the more important the factor. The maximum possible score is 5 and the minimum possible is 1.

Source BTE survey of travel agents.

that potential travellers would have environmental issues foremost in their thoughts.

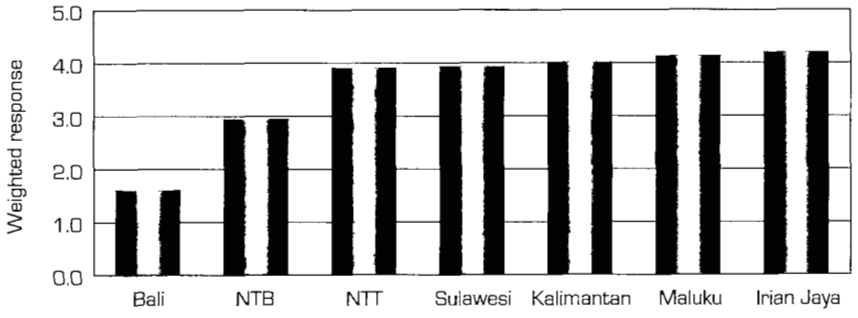
Question 7

Travel agents were asked to assess the information available to them on each province. As might be expected, the information available to travel agents about Bali was generally good to very good. The trend apparent in the responses was that the further the province was from Bali (that is, the more remote the province), the poorer the information available to travel agents. Information about Nusa Tenggara Barat[12] (NTB) is not as good as for Bali, but information about the other eastern Indonesian provinces was generally ranked as poor to very poor (see Figure 7.5).

There was difference in the answers by respondents and non-respondents. Both groups ranked Bali as having good to very good information, but the non-respondents were more likely to report poor information for NTB. The non-respondents also gave significantly different answers for Irian Jaya than the respondents. One reason could be that non-respondents on average were less well informed about eastern Indonesia than the respondents, which is why they may not have responded in the first place.

12 Lombok is the best known destination in Nusa Tenggara Barat.

FIGURE 7.5 TRAVEL AGENTS' KNOWLEDGE OF EASTERN INDONESIAN PROVINCES



Note The higher the weighted response, the poorer the information. The maximum possible score is 5 and the minimum possible is 1.

Source BTE survey of travel agents.

Travel agents are a primary source of information for intending tourists. If the information about eastern Indonesia available to them is poor, then very few of their clients will be encouraged to travel to the region.

Question 8

Question 8 asked travel agents if they had heard of the 'Happy Day' that initiated the 'Let's Go Indonesia' promotion. The 'Happy Day' promotion provided accommodation and travel awards for tourists arriving in Indonesia on a specific day. Only 14 per cent of respondents had heard of the promotion and at least two of those only knew about the promotion because they had recently visited Bali. Almost all of those that had heard of the promotion indicated they had insufficient information to provide any useful advice to their clients on how to benefit from the promotion.

On the face of the evidence provided by the responses to the survey, it seems as though the 'Happy Day' promotion had virtually no impact on Australian tourism to Indonesia. It also appears that travel agents will need considerable more printed information if the 'Let's Go Indonesia' promotion is to have any impact in Australia.

Question 9

The final question on the survey form asked travel agents to rank eastern Indonesia (excluding Bali) on a set of tourism indicators. About

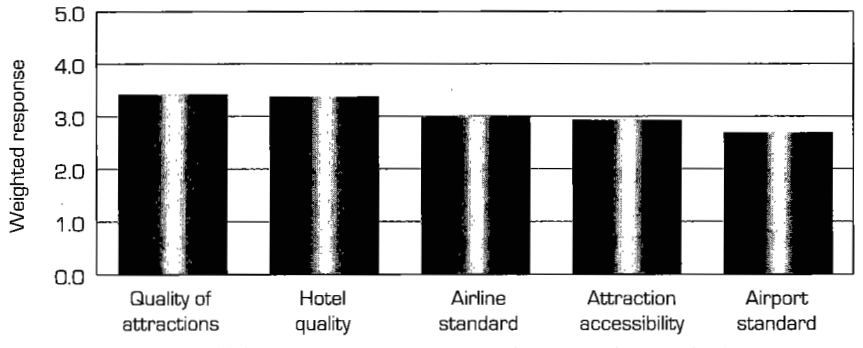
17 per cent of the respondents were unable to answer this question because they had little knowledge of the region.

On average, travel agents generally ranked the quality of hotels and tourist attractions as being between adequate and good. Airlines and accessibility of the attractions were assessed as being adequate. The standard of airports was assessed as being between poor and adequate (see Figure 7.6).

In line with the aviation focus of this report, the responses for airports and airlines are shown in more detail in Figure 7.7. Travel agents generally have a better impression of airlines than they do of airports in eastern Indonesia. The relatively poor impressions of eastern Indonesian airports may be in comparison with Australian airports rather than in the context of Indonesian conditions. It should also be noted that travel agents reported a generally poor knowledge of eastern Indonesia so that their assessment of eastern Indonesian airports may be based on imperfect knowledge.

Non-respondents gave similar answers to respondents in their assessment of the quality of airlines and airports, but were generally more optimistic about the accessibility of attractions and less optimistic about the quality of them.

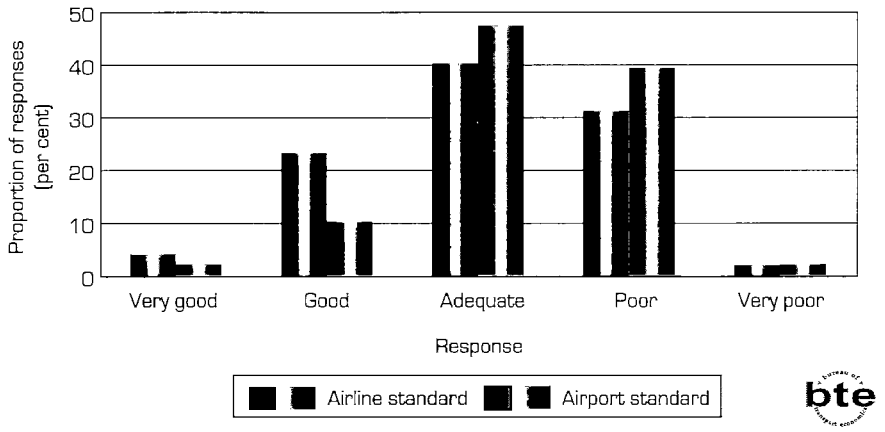
FIGURE 7.6 TRAVEL AGENTS' ASSESSMENT OF EASTERN INDONESIAN TOURIST FACILITIES



Note The higher the weighted response, the higher the standard or quality. The maximum possible score is 5 and the minimum possible is 1.

Source BTE survey of travel agents.

FIGURE 7.7 TRAVEL AGENTS' PERCEPTIONS OF AIRPORTS AND AIRLINES IN EASTERN INDONESIA



Source BTE survey of travel agents.

TYPE OF TOURISM

The type of tourism is important for deciding the type of tourist attractions to develop and the quality of accommodation and transport infrastructure. If eastern Indonesia is expected to attract high-income tourists who look for high-quality accommodation and high-quality attractions, then a transport system consistent with these expectations would be preferable. In contrast, if eastern Indonesia is more likely expected to attract low-income tourists seeking adventure-type holidays, then the quality of the transport system is not so important.

In Chapter 2 it was mentioned that tourism in Bali was initially conceived and developed as an up-market destination. Since then it has developed as a low-cost destination, popular with young, low-income travellers. The results of the survey of travel agents is consistent with this view, with respondents indicating that their clients place the financial cost of travel as the most important factor influencing their choice to travel to Indonesia. The observations of the project team during the field trips to eastern Indonesia were also consistent with tourists apparently looking for low-cost holidays in the region.

The evidence, although somewhat limited, suggests that the type of tourist most likely to be attracted to eastern Indonesia is the traveller seeking relatively low-cost holidays.

DEVELOPMENT OF BIAK

Biak was selected as an integrated economic development area, which is a region targeted for rapid economic development. Tourism was seen as one of the promising sectors that could assist the development of the region (Euro Asia Management 1998a, p. 86). The Biak Irian Tourism Development Corporation (BITDC) was established in 1990 with the objective of developing tourism activities all over eastern Indonesia (Euro Asia Management 1998b, p. 76).

Biak has beautiful beaches, rivers and waterfalls and nearby there are some of the best dive sites in the region (Euro Asia Management 1998b, p. 75). The Lonely Planet (Turner et al 1997, p. 979) commented that diving around Biak had 'the potential to rival northern Sulawesi'. However, the Lonely Planet added that 'the diving industry in Biak is currently frustratingly unorganised and undeveloped' (Turner et al 1997, p. 979).

The BITDC acquired 400 hectares of land with plans to develop it along the lines of the Bali Nusa Dua model. Biak had some of the characteristics of Bali in its early days. The plan called for the construction of six hotels, a marina and other facilities. BITDC constructed a four-star hotel to initiate the project (Euro Asia Management 1998b, p. 76).

Unfortunately the project has been a failure. Euro Asia Management (1998b, p. 76) described it as 'a kind of fiasco'. No other hotels were built and the BITDC-constructed hotel remains empty most of the time. Euro Asia Management (1998b, p. 76) commented that there were only six rooms out of 270 occupied during July 1997. Lessons that can be drawn from the Biak experience can be of value for the development of tourism in other parts of eastern Indonesia.

Euro Asia Management (1998b, pp. 76–77) suggested that the following factors explain the failure of the Biak venture:

- the international flights on which the service standards were based ceased just before the hotel opened;
- there were 'illusions' about the market potential of the project;
- the forecasts were too optimistic; and
- the investment was not adapted to the local conditions.

Although the Nusa Dua model was a success in Bali, there are clearly other factors at work in Biak that inhibit the same sort of success. The suggestions of Euro Asia Management provide some of the answers and essentially boil down to the fact that there was inadequate market

research before a commitment was made to the project. For example, it appears that there may have been a lack of consultation between Garuda and the project developers on the future development of international flights to Biak.

If the BTE survey of travel agents is representative of the information available in other countries, then promotion of the region is not developed. If potential tourists and the travel agents advising them do not know what is available, then it is not surprising that there are few guests.

Because of the inadequate market research, the development of Biak was designed to attract a type of tourist that normally does not visit the remote regions of eastern Indonesia, and certainly is unlikely to do so in the absence of adequate promotion. The experience of Bali and the way in which the Lonely Planet is written suggests that tourists seeking adventure and nature holidays are those most likely to visit Biak and other parts of eastern Indonesia. The four-star hotel development will represent a cost that exceeds the amount most adventure tourists are willing to pay.

The remoteness of Biak and the cost of travelling there, now that direct international flights do not call there, would also be a deterrent to tourists travelling to a tight time schedule.

The lessons of Biak can be summarised in the following statements.

- New tourist developments require adequate market research to identify the market segment that will be attracted to the development.
- Tourist facilities need to be adequately promoted to attract tourists to visit them.
- Provision of good accommodation is not sufficient by itself to attract tourists—attractions need to be accessible and service providers need to be available for such activities as diving and trekking.
- The more remote the location, the more likely tourists are to be seeking adventure-type holidays and low-cost accommodation.

AVIATION ISSUES

Aviation is a key to the promotion of international tourism in eastern Indonesia. Ease of access to eastern Indonesia from other countries is essential if international tourists are to choose eastern Indonesia over other destinations. An effective domestic aviation system is also

essential to allow international tourists to move around eastern Indonesia. Domestic aviation is also of immense importance to the integration of eastern Indonesia into the Indonesian economy.

Currently there are two issues to consider in the context of this study:

- international aviation and access to eastern Indonesia; and
- domestic aviation and its ability to continue to meet the transport needs of eastern Indonesia.

International aviation

Access from Australia to eastern Indonesia is presently marked by a significant amount of freedom for Australian and Indonesian operators. Access to eastern Indonesian destinations (except for Bali) by Australian airlines does not count towards the bilateral capacity agreed to by the Indonesian and Australian governments. Although the agreements allow for freedom of access, little advantage has been taken of this option, principally because of limited demand.

Australian airlines are major operators into Denpasar, but European and North American airlines have only a limited presence. According to Euro Asia Management (1998b, p. 224), in 1997 only KLM and Lufthansa flew to Denpasar, with British Airways and Air France having ceased operations some time prior to the writing of the Euro Asia Management (1998b) report. Both KLM and Lufthansa have ceased or are intending to cease operating to Denpasar by the end of 1998.

As the financial crisis in Indonesia developed, demand for services to Jakarta dropped substantially, but demand to Denpasar increased significantly. By September 1998, Ansett and Qantas had reduced or withdrawn services to Jakarta and increased those to Denpasar. Some European airlines had also reduced services to Jakarta, but were unable to increase or introduce services to Denpasar, because of the terms of their bilateral agreements.

British Airways especially wants to reintroduce services to Denpasar. British Airways has received support from the Bali Chapter of the Pacific Asia Travel Association (PATA). The Bali Chapter of PATA commented that 'U.K. arrival statistics to Bali continue to demonstrate growth and in the face of a general downturn in tourist arrivals to Indonesia, what possible justification can there be for impeding any airline wishing to fly to Indonesia?' (PATA Bali Chapter 1998a).

The Bali Chapter of PATA has supported the establishment of an 'open skies' policy for Bali. It argues that 'the tourism industry in Bali is driven

by air seat availability and ... by denying air access will only cause further suffering to the national economy and further unnecessary delay in steps now under way to make the national carrier economically viable' (PATA Bali Chapter 1998b).

The National Tourism Development Master Plan noted that 'an insufficient number of airline companies operate between Europe and North America and Indonesia' (Euro Asia Management 1998a, p. 183). As a solution it virtually recommended an open skies policy for international aviation in Indonesia.

International aviation agreements are more difficult and complex than when perceived from the perspective of a single industry. In bilateral negotiations it could be expected that Indonesia would want something in return for its national airline for giving freer access to British Airways or other foreign airlines. It is probably too much to ask Indonesia to unilaterally declare an open skies policy, especially when its own airlines are in such a difficult financial position. Although an open skies policy may make access more efficient, an open skies policy on its own is unlikely to generate tourism demand.

Certainly the changing demand for international aviation in Indonesia requires some greater flexibility to allow the supply to switch from Jakarta, where demand has declined, to Denpasar, where demand is still strong. President Habibie announced on 24 September 1998 that foreign airlines would have greater freedoms if they were carrying tourists. However, in a subsequent statement it was announced that the greater freedoms would only apply to charter flights. It is beyond the terms of reference for this study to comment further on the international aviation policies of the Indonesian government.

One of the difficulties for international airlines wishing to travel to eastern Indonesia (apart from Bali) is that the number of international passengers wishing to travel to the region is generally small and for most destinations is not sufficient to allow commercially profitable operations.

One possible approach is to allow operators wishing to operate to non-Bali destinations in eastern Indonesia beyond rights not now available to them. Such an enhancement of rights would effectively increase the market for the operator and increase the chance of generating profitable load factors. For example, although approval for a service from Darwin to Ambon exists, it is unlikely to be profitable because of the low traffic volumes. Increased volumes might be possible if a service were permitted to carry passengers between Ambon and the Philippines as well as between Darwin and Ambon. Other routes hold greater promise. Cities with larger populations than Darwin could

provide greater potential for eastern Indonesian tourism. Singapore, for example, has a large population and is also a major hub for international aviation. If such routes were feasible, then increased tourism traffic would be generated to the benefit of eastern Indonesia and the airlines concerned.

Domestic aviation

Domestic aviation has been drastically affected by the financial crisis. There has been a severe reduction in demand as individual incomes and business activities have declined. Many people who previously would have travelled by air have since switched to sea or ferry transport. Domestic airlines suffered a second impact from the financial crisis. Their revenue is in rupiah, but many of their larger costs are in US dollars, such as lease payments and spare parts. As a consequence of these negative effects of the crisis, domestic aviation activity has declined substantially.

By August 1998 domestic flights in eastern Indonesia (including flights connecting eastern Indonesia to the western provinces) had been reduced by 32 per cent and passenger capacity by 22 per cent[13]. Sempati had ceased operating on 2 June 1998, Merpati was reported to be merging with Garuda, and Garuda was also reported to be in trouble and was returning some of its leased aircraft.

Like many Indonesian corporations, the airlines were technically insolvent. Because of its budgetary problems, the government was not able to give the airlines any substantial assistance. The project team was told that the most the government could do for the airlines was not to request the payment of import taxes on spare parts.

There were reports of the airlines trying to reach agreement on the sharing of equipment and routes to allow a basic service to be maintained. The project team was told that the government was assisting in this process. *Australian Aviation* (October 1998, p. 20) reported that the plan to combine operations had apparently been abandoned.

Implications

It can be expected that it will take some time before the domestic airlines will be in a position to restore services to the level they had

13 The estimated reductions in flights and capacity may be overstated by a small amount because it was not possible to fully reconcile the data for the pre-crisis period with the August 1998 data.

provided during 1997. Apart from the difficulty the airlines themselves are experiencing, it will take some considerable time before domestic demand builds up again to previous levels. Because international tourist numbers for most of eastern Indonesia are small, it is the domestic demand that will determine the ability of the airlines to provide a service.

While the domestic airlines continue to face these extreme difficulties it is reasonable to expect that only the major centres will continue to receive regular and reliable aviation services. For the tourism industry this means that attractions that lie away from the major centres will not be easily accessible by air and access will generally have to be by road or sea. Such attractions will be difficult to promote to tourists other than the hardened adventure traveller.

The analysis of the adequacy of the infrastructure concluded that runway capacity was adequate for the traffic anticipated under the optimistic scenario. However, there were plans to increase the capacity of runways or build new airports at Samarinda and Pontianak to allow the operation of B737 aircraft. The project team was told that there was a policy to make all provincial capitals accessible by B737 aircraft. The analysis for this report indicates that expansion of capital city airports to allow use of B737 aircraft is not necessary for tourism or traffic reasons. Expansion can be deferred until the economy improves without any impact on service quality for passengers. As a general rule it would be preferable to relate expansion to demand, unless there are other national interest issues for providing capacity in excess of demand. The problems at Biak are an example of the economic cost of providing infrastructure far in advance of demand.

CRUISE SHIPPING

Eastern Indonesia has considerable potential for cruise shipping. It has many of the natural attractions of other popular cruise shipping areas around the world. One attempt was made to promote the region through the Arafura Sea Tourism Zone concept. The promotion had met with little success before the onset of the financial crisis and there appears little prospect of it being developed further until recovery in the Asian tourist market is evident.

Cruise shipping offers an alternative means of attracting travellers to eastern Indonesia during a period when the domestic aviation industry is in trouble. It has the advantage that far less infrastructure is required than for aviation. Cruise ships provide both transport and accommodation. The National Tourism Development Master Plan observed that 'Indonesia is a natural location for cruises which could *a priori* rival ... the Caribbean' (Euro Asia Management 1998b, p. 91).

Euro Asia Management (1998b, p. 91) identified a lack of harbour infrastructure as the main limitation on the development of cruise shipping. However, there are cruise operators who provide attractive cruises that require only simple shore facilities. Euro Asia Management also noted that there are 'mini' or 'adventure' cruises operating between the islands of Lombok, Sumbawa, Komodo, Sumba and Nusa Tenggara. These are generally small ships and diving is often included as an element of the cruise. Such types of cruises are well suited to the current situation in Indonesia.

Although there is potential for cruising in eastern Indonesia, there are some regulatory factors that inhibit its development[14]. It was suggested to the project team that Indonesian shipping law is vague in some respects. Cruise operators face uncertainty in how the law will be interpreted and enforced. The vagueness provides opportunity for corruption and this in itself plays a significant role in scaring off major cruise companies from investing in the area. US cruise shipping companies are especially inhibited by this factor.

An example provided to the project team was that of the operation of cabotage in the cruise shipping industry. Foreign ships must obtain an import licence to operate in Indonesian waters. However, a licence is not required if the ship is only operated in Indonesian waters for a short period of time. The difficulty is that the legislation does not define the length of a short period of time.

Other matters highlighted to the project team included the incompatibility between the immigration and shipping laws, the effect of taxation laws to inhibit the use of Indonesian flagged cruise ships and the general lack of coordination between government departments when a new law is being considered. Poor coordination between departments was said to often lead to unintended consequences for new legislation.

If a more benign regulatory environment could be developed, it is possible that cruise shipping could be a valuable contributor to the development of tourism in eastern Indonesia.

14 The comments in the following paragraphs on cruise shipping are based on a meeting between the project team and Mr Jack Daniels, General Manager, Spice Island Cruises, held on 16 December 1997 in Denpasar.

POSSIBLE STRATEGY

Summary of present position

Tourism in eastern Indonesia is focused on Bali, which is doing well despite the economic crisis. Numbers of tourists to other eastern Indonesia destinations are relatively small and the impact of the financial crisis on international travellers to eastern Indonesia apart from Bali was not known at the time of writing (October 1998). However, it is very likely that numbers would be reduced simply because the aviation capacity to most of eastern Indonesia was reduced.

Although there is international access to airports in eastern Indonesia other than Denpasar, the actual number of international travellers entering Indonesia via these airports is limited. Services to the non-Bali airports are generally regional.

Domestic aviation is in deep trouble with substantial reductions in capacity and frequency. If the moderate or pessimistic scenarios turn out to be more accurate descriptions of the future, then the plight of domestic operators will worsen.

Aviation infrastructure is mostly adequate to handle the traffic expected under the optimistic scenario. Runways are all adequate, but some terminals will need expansion.

Although the quality of some of the infrastructure may be questioned, given that international tourists visiting eastern Indonesia tend to be those looking for adventure or low-cost holidays, quality may not be an important issue. But service reliability and a reasonable frequency is important for international tourists.

Cruise shipping has considerable potential in eastern Indonesia, but has not approached its potential, principally because of the regulatory environment as discussed above.

The survey of travel agents reported upon earlier indicates that promotion of the region beyond Bali is generally poor, at least in Australia.

Possible strategy

International tourists, including adventure tourists, expect reliable transport services with a reasonable frequency. A strategy for the development of tourism and transport in eastern Indonesia will need to allow for these expectations.

Although the data in the appendices and in the National Tourism Development Master Plan (Euro Asia Management 1998a, b) indicates

that there are many possible attractions in eastern Indonesia, there is little point in developing or promoting them unless they are readily accessible. This suggests that the attractions with the best chance of success are those closest to the active international access points[15] or attractions easily accessible from the international access points.

A sensible strategy would be to focus on the readily accessible attractions with initial emphasis on those nearest the areas that are already developed. This suggests that Lombok, which is already subject to development, would be a prime area for further development because of its closeness to Bali. Other areas are Sulawesi Selatan and Sulawesi Utara, because of their already significant roles as international gateways at Ujung Pandang and Manado, respectively, and the even more significant role of Ujung Pandang as a hub and gateway to eastern Indonesia.

Ambon could also be an important area to develop because of its major aviation link with Ujung Pandang. However, within Maluku province the more distant attractions from Ambon have difficult aviation links with Ambon, which have not been very reliable in more optimistic times.

The possibility of code-sharing or other forms of cooperation between Indonesian domestic airlines and international airlines could be worth investigating. Some action already appears to have commenced in this regard. For example, Ansett Airlines was reported as having held discussions with Garuda and Merpati on some joint operations 'to share markets and to develop tourism' (DCN 1998c, p. 4). However, major international airlines generally require their code-sharing partners to have high-quality services. Indonesian domestic airlines may not always have sufficiently high standards to enter into major code-sharing agreements.

Development of joint operations would have the benefit of increasing the promotional opportunities for eastern Indonesian tourist attractions and increasing passenger numbers for Indonesian domestic airlines.

Another option is for resort operators to arrange their own aviation links to convenient cities (for example, between Banda and Ambon). At present the regulatory environment does not allow this to happen. If the major domestic airlines are unable to provide a satisfactory service, then a service arranged by the resort operator would benefit tourism, the resort and also the airlines as they would still carry tourists to the airport served by the resort operator.

15 Some airports such as Biak are technically very suitable for international operations, but attract very few international flights.

Although other parts of eastern Indonesia are less accessible by air, the use of cruise shipping could work to open up the more remote attractions. The expansion of cruise shipping would require little in the way of additional infrastructure if the adventure type of tour were the main form of cruising promoted. Expansion of cruise shipping would be more easily developed if the regulatory environment was improved to remove legislative ambiguity and the other difficulties mentioned above.

If cruise shipping proves successful at a particular attraction, then this would be a signal for the development of accommodation and improved transport links to the attraction. The Biak lesson has shown the problems that can occur if development occurs a long time ahead of demand and this cannot be afforded in the current financial straits faced by Indonesia. Cruise shipping provides a means of testing and proving a market before the commitment of scarce capital.

Another important point is promotion of the region. Our survey illustrates that in Australia at least, eastern Indonesia beyond Bali receives only limited promotion from travel agents, simply because they have poor information about the area. Even the Internet is of little use. For example, when it was accessed by the BTE in August 1998, the Indonesian Tourist Promotion Board site in Australia had not been updated since 1995. Promotion strategy should be tied in with the realities of the transport system and the impact of the crisis. That is, promotion would be best directed at the attractions more easily accessible and at the travellers most likely to want to visit them.

Because financial resources are extremely limited, only some transport infrastructure can be upgraded. If tourism is a priority, then priorities for upgrading of the transport infrastructure should also reflect expected tourist demand.

In some cases a change to a more efficient operating procedure may avoid the need to upgrade. For example, the present practice in eastern Indonesia is to require intending passengers to check in at the airport two hours before the departure time of the aircraft. At a meeting in Jakarta on 14 July 1998, Merpati staff advised the project team that a check-in time of one hour prior to departure was all that was needed for operational reasons. If this is correct then shortening the time intending passengers were required to wait in the terminal would reduce airport terminal congestion.

In general, the low value of the rupiah provides an excellent opportunity to attract international visitors wishing to enjoy a low-cost holiday in an attractive environment. The increased demand for travel to Bali is evidence of this opportunity. The challenge is to make the most of the

opportunity by concentrating on those attractions that are reliably accessible. The strategy outlined here is based on those principles. This report cannot develop those ideas to any depth, but they are presented with the intent to stimulate further investigation.

8

CONCLUSIONS AND RECOMMENDATIONS

The study was undertaken during a very traumatic time for the Indonesian economy and its people. The economy was transformed from one experiencing sustained rapid growth to one with a greatly depreciated exchange rate, negative growth, a high unemployment rate and serious food shortages. It was against this background that the project team needed to project future international tourism demand for eastern Indonesia.

Under these conditions the normal forecasting methods, based as they are on the extrapolation of past trends, could not adequately cope with the massive changes occurring in Indonesia. Instead the project team developed three scenarios (optimistic, moderate and pessimistic) to describe the possible future environment in which tourism might operate. Although scenarios do not have the mathematical rigour of econometrics or other conventional forecasting techniques, they did provide a means of understanding the forces at work.

The scenarios highlight the importance of perceptions of personal security and environmental problems to potential travellers. The scenarios provide a means for adapting planning in the tourism and transport sectors to the changing environment as events unfold. The scenario analysis suggests that by early 1999 the likely course of events should become much clearer.

The scenarios were used as a tool to modify a base-case forecast developed under the assumption of no financial crisis. Assessment of the transport infrastructure was undertaken under the optimistic scenario, as this was the scenario that would result in the transport infrastructure reaching its capacity at the earliest date. The infrastructure analysis concluded that airport runway capacities were generally adequate, although Denpasar runway may possibly approach peak-hour capacity by 2005. Runway capacity at Denpasar may need

careful management or, alternatively, there could be a spreading of the peak.

Airport terminals at Ternate, Ketapang, Mataram, Banjarmasin and Denpasar may need expanding by 2005 under the optimistic scenario. Under the alternative scenarios, upgrading would not be required until a later date. The analysis method only gives indicative results, so that the actual need for and size of expansion would require more detailed analysis than was possible in this present study. Some increase in effective capacity could be achieved by efficiency improvements in the use of existing infrastructure. One example is the potential to shorten the time required for travellers to arrive at the airport before aircraft departure from the present two hours to one hour, which was said to be sufficient.

The analysis was made more difficult because of problems with the data used to develop forecasts and infrastructure assessments. Data collections are generally extensive in Indonesia. However, the quality of much of the data is suspect. Totals in columns of figures frequently did not equal the sum of the individual numbers. Data collected from different sources for the same quantities frequently differed significantly. This made it difficult for the project team to know which data to accept. In general, the team adopted a policy of using the data that were published or released closest to the source of the activity being measured. The issue of data quality raises the question of the need for training in the control of data quality.

There was one source of data on international tourism that is apparently not used to the most of its potential. Guests at hotels and other commercial accommodation complete cards on arrival, which detail the purpose of the visit, where the guest stayed before arriving at the hotel, where they intended to go next, and nationality. The cards provide an excellent source of data that could be analysed to develop a picture of the movements of international visitors within eastern Indonesia, including how long they stayed at each location and so on. The project team was told at a meeting in Jakarta on 15 July 1998 that only nationality and length of stay items are extracted from the cards for statistical analysis. Consideration could be given to the greater use of the data contained on these cards for tourism planning purposes.

Important issues influencing the development of tourism and related transport infrastructure in eastern Indonesia include the following.

- The experience of the development of Bali and the results of the survey of travel agents indicate that international tourists visiting eastern Indonesia are predominantly those looking for low-cost

holidays. Personal security is clearly important and is the second most important factor, according to those responding to the BTE survey.

- Promotion of eastern Indonesia, apart from Bali, has been poor in Australia, and is also probably poor in other parts of the world. So it is not surprising that few tourists venture beyond Bali.

- Air travel to eastern Indonesia has been severely disrupted following the financial crisis, with an estimated reduction in seat capacity of 22 per cent compared with pre-crisis capacity. Reduced frequency and reliability will affect the attractiveness of eastern Indonesia to international tourists.

- Biak has not succeeded as a tourist development area despite the construction of first-class accommodation on the island. The reasons for its failure include its remote location and limited promotion.

A suggested tourism development strategy is to build out from locations that already have significant international access and developed tourism attractions. Such a strategy would focus on:

- Denpasar (international access and already developed), Lombok (close to Denpasar and developing attractions), Sulawesi Selatan (international access and developed or developing attractions), Sulawesi Utara (international access); and

- Ambon, because it is on a major route from Ujung Pandang and has good attractions.

Increased promotion of these areas (except for Bali, which is already heavily promoted) is essential if tourism is to have any significant chance of development. Although the study has suggested that adventure tourism or low-cost tourism is the most likely type of tourism to be attracted to eastern Indonesia, market research to define more accurately the appropriate market segment would be needed to ensure scarce promotion funds are spent in the most effective manner.

The freeing up of cruise shipping through the relaxation of the regulatory environment would facilitate the opening up of attractions in the less accessible places, such as areas of the province of Maluku distant from Ambon, parts of Nusa Tenggara Barat, Nusa Tenggara Timor and Irian Jaya.

Aviation could be improved by an increase in 'fifth freedom rights'[16] in eastern Indonesia, which would assist airlines wishing to serve the region to achieve economical load factors. This would be to the commercial advantage of the airlines and to the advantage of the tourist industry in eastern Indonesia. The ability to code-share between domestic and international airlines for operations in eastern Indonesia could assist in the promotion of the region and assist in the rehabilitation of Indonesian domestic airlines. The possibility of introducing this reform would be well worthwhile investigating.

Development of tourism and the associated transport infrastructure in eastern Indonesia was a challenge before the onset of the financial crisis. The challenge is now even greater as not only are the difficulties that existed beforehand still in existence, but there are the added problems of vastly reduced aviation services, reduced financial resources available for promotion and the negative perceptions about personal safety that need to be overcome. The resources that are available need to be allocated in the most effective way, and should not be dispersed on ventures that have little chance of being successful. The theory investigated for the study makes it clear that tourism is no panacea for economic ills. Tourism plans need to be adequately evaluated to ensure that the benefits of tourism are retained in the region providing the tourism attractions.

If it were possible to express the conclusions of this study in a short phrase, the phrase would be along the lines of: 'targeted promotion and focused development'.

16 Fifth freedom is the right of an airline of one country to carry traffic between two foreign countries as long as the flight originates and terminates in its own country.

APPENDIX I

PELNI SEA ROUTES

TABLE I.1 PELNI SEA ROUTES 1997

Route	*Frequency*	*Operator*	*Passenger capacity*	*Vessel name*	*Vessel GRT*
Bitung - Ternate - Ambon - Baubau - Makasar - Surabaya - Tg. Priok - Padang - Nias - Sibolga - Padang - Tg. Priok - Surabaya - Makasar - Baubau - Ambon - Bitung	14 days round voyage	PT. Pelni	1 596	Kerinci	13 948
Bitung - Tolitoli - Pantoloan - Balikpapan - Makasar - Surabaya - Tg. Priok - Padang - Sibolga - Nias - Padang - Tg. Priok - Surabaya - Makasar - Balikpapan - Pantoloan - Tolitoli - Bitung	14 days round voyage	PT. Pelni	1 596	Kambuna	13 948
Dumai- Kijang - Muntok - Tg. Priok - Surabaya - Makasar - Balikpapan - Pantoloan - Kwandang - Bitung - Kwandang - Pantoloan - Balikpapan - Makasar - Surabaya - Tg. Priok - Muntok - Kijang - Dumai	14 days round voyage	PT. Pelni	1 729	Umsini	13 861
Tg. Priok - Makasar - Baubau - Ranggai - Bitung - Ternate - Sorong - Monokwari - Biak - Jayapura - Biak - Monokwari - Sorong - Ambon - Dili - Kupang - Denpasar - Surabaya - Tg. Priok	14 days round voyage	PT. Pelni	1 974	Ciremai	13 861

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TABLE I.1 PELNI SEA ROUTES 1997 (continued)

Route	*Frequency*	*Operator*	*Passenger capacity*	*Vessel name*	*Vessel GRT*
Banyuwangi-Denpasar-Lembar-Makasar-Baubau-Raha-Kendari-Kolonedale-Luwuk-Gorontalo-Bitung-Tahuna-Lirung-Davao-Lirung-Tahuna-Bitung-Gorontalo-Luwuk-Kolonedale-Kendari-Raha-Baubau-Makasar-Lembar-Denpasar-Banyuwangi	14 days round voyage	PT. Pelni	969	Tilongkabila	6 400
Dumai-Kijang-Muntok-Tg.Priok-Surabaya-Makasar-Baubau-Ambon-Banda-Tual-Fakfak-Banda-Ambon-Bau-bau-Makasar-Surabaya-Tg.Priok-Kijang-Muntok-Dumai	14 days round voyage	PT. Pelni	1 733	Rinjani	13 851
Surabaya-Banjarmasin-Surabaya-Bawean-Banjarmasin-Semarang-Banjarmasin-Bawean-Surabaya-Banjarmasin-Surabaya-Bawean-Banjarmasin-Bawean-Surabaya-Banjarmasin-Semarang-Banjarmasin-Surabaya	14 days round voyage	PT. Pelni	920	Kelimutu	5 588
Tg. Priok-Tg.Pandan-Pontianak-Semarang-Kumai-Semarang-Pontianak-Tg.Pandan-Tg.Priok-Tg.Pandan-Pontianak-Cirebon-Pontianak-Tg.Pandan-Tg.Priok	14 days round voyage	PT. Pelni	920	Lawit	3 820
Balikpapan-Surabaya-Parepare-Pontoloan-Nunukan-Tarakan-Balikpapan-Parepare-Surabaya-Makasar-Balikpapan-Tarakan-Pantoloan-Makasar-Surabaya-Balikpapan	14 days round voyage	PT. Pelni	1904	Tidar	13 861
(a) Merauke-Timika-Dobo-Tual-Saumlaki-Kisar-Dili-Larantuka-Labuhanbajo-Bima-Banyuwangi-Denpasar-Bima-Labuhanbajo-Larantuka-Dili-Kaisar-Saumlaki-Tual-Timika-Merauke	14 days round voyage	PT. Pelni	969	Tatamailau	6 041

Continued on next page

TABLE I.1 PELNI SEA ROUTES 1997 (continued)

Route	*Frequency*	*Operator*	*Passenger capacity*	*Vessel name*	*Vessel GRT*
b) Merauke-Timika-Tual-Kaimana-Fakfak-Sorong-Manokwari-Nabire-Serui-Jayapura-Serui-Jayapura-Serui-Nabire-Manokwari-Sorong-Fakfak-Kaimana-Tual-Dobo-Timika-Agats-Merauke	14 days round voyage	PT. Pelni	969	Tatamailau	6 041
Kupang-Larantuka-Makasar-Batulicin-Semarang-Pontianak-Tambelan-Kualaenok-Kijang-Tambelan-Pontianak-Semarang-Batulicin-Banjarmasin-Makasar-Larantuka-Kupang	14 days round voyage	PT. Pelni	969	Sirimau	6 041
Denpasar-Lembar-Waingapu-Ende-Kupang-Kalabahi-Dili-Maumere-Makasar-Tarakan-Nunukan-Makasar-Maumere-Dili-Kalabahi-Kupang-Ende/Waingapu-Denpasar	14 days round voyage	PT. Pelni	969	Awu	6 041
Tg. Priok-Surabaya-Denpasar-Kupang-Dili-Ambon-Sorong-Manokwari-Biak-Jayapura-Biak-Manokwari-Sorong-Ambon-Dili-Kupang-Denpasar-Surabaya-Tg. Priok	14 days round voyage	PT. Pelni	1 974	Dobonsolo	13 861
Semarang-Sampit-Surabaya-Batulicin-Parepare-Samarinda-Tolitoli-Tarakan-Nunukan-Tolitoli-Samarinda-Parepare-Batulicin-Surabaya-Sampit-Semarang	14 days round voyage	PT. Pelni	969	Leuser	6 400
Semarang-Kumai-Surabaya-Samarinda-Tarakan-Nunukan-Parepare-Nunukan-Tarakan-Samarinda-Surabaya-Kumai-Semarang	14 days round voyage	PT. Pelni	969	Rinaiya	6 400
Tg.Priok-Tg. Uban-Letung-Tarempa-Natuna-Serasan-Tambelan-Pontianak-Bawean-Surabaya-Sampit-Surabaya-Bawean-Pontianak-Tambelan-Serasan-Natuna-Tarempa-Letung-Tg. Uban-Blinyu-Tg. Priok	14 days round voyage	PT. Pelni	989	Bukitraya	6 400

Continued on next page

TABLE I.1 PELNI SEA ROUTES 1997 (continued)

Route	*Frequency*	*Operator*	*Passenger capacity*	*Vessel name*	*Vessel GRT*
Surabaya-Badas-Labuanbajo-Waingapu-Ende-Sabu-Rote-Kupang-Rote-Sabu-Ende-Waingapu-Labuanbajo-Bima-Makasar-Bima-Labuanbajo-Waingapu-Ende-Sabu-Rote-Kupang-Rote-Sabu-Ende-Waingapu-Labuanbajo-Badas-Surabaya	14 days round voyage	PT. Pelni	500	Pangrango	2 600
a. Surabaya-Makasar-Baubau-Namlea-Ambon-Banda-Baubau-Makasar-Surabaya	14 days round voyage	PT. Pelni	2 003	Lambelu	14 701
b. Surabaya-Balikpapan-Makasar-Tg. Priok-Balikpapan-Surabaya Tg. Priok - Belawan	14 days round voyage	PT. Pelni	2 003	Bukit Siguntang	14 701

Source State Owned Enterprise PELNI pers. comm. Dec. 1997.

APPENDIX II

BALI

INTRODUCTION

Geography

Bali is located between the islands of Java and Nusa Tenggara Barat, with Kalimantan to its north. The island of Bali is approximately 5561 square kilometres in area and makes up only 0.29 per cent of Indonesia's total area. The capital of the province is Denpasar, located in the south of the island. A volcanic range divides Bali, with major tourist resorts located in the south; the highlands are approximately one and a half hours' drive from Denpasar to the north of the island.

Population

Bali's population stood at 2 777 800 in 1990 with a population density of 500 persons per square kilometre and an average growth rate of 1.18 per cent in the 10 years to 1990. Over 90 per cent of Bali's population are Hindu. The 1995 Intercensal Population Survey estimated Bali's population had increased to 2 895 600 and the density had risen to 521 persons per square kilometre. The population projection for 1996 was 2 924 400 and a density of 526 persons per square kilometre (Central Bureau of Statistics (BPS) 1998).

Economy

Bali's Gross Regional Domestic Product (GRDP) for 1993–1996 is shown in Table II.1. GRDP per capita in 1995 was Rp 2 280 149. Trade, restaurants and hotels are the largest sector of Bali's GRDP, followed by agriculture and services.

TABLE II.1 GRDP OF BALI

(million rupiahs)[a]

No.	Sectors	Year			
		1993	*1994*	*1995*	*1996*
1	Agriculture	1 253 818	1 277 987	1 335 731	1 388 757
2	Mining and quarrying	47 217	49 320	51 283	53 991
3	Manufacturing industries	408 529	470 873	529 487	583 460
4	Electricity, gas and water supply	48 401	54 119	63 126	73 070
5	Construction	279 160	299 916	318 582	349 727
6	Trade, restaurants and hotels	1 665 957	1 833 470	1 998 471	2 200 841
7	Transport and communication	708 007	776 539	850 108	932 515
8	Finance, rent of building and business services	403 870	424 836	458 716	502 254
9	Service	874 963	930 174	996 896	1 056 818
	Total	5 689 922	6 117 234	6 602 400	7 141 433

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TOURISM INFRASTRUCTURE

Tourist attractions

Where are they? What type?

Bali began developing as a major tourist destination in the mid-1960s and 1970s. Tourism has been estimated to contribute up to 10 per cent of Bali's GRDP (Hill 1989). Tourist attractions are spread throughout the island with the major tourist beach resorts of Kuta, Nusa Dua and Sanur located in the south and Candi Dasa in the east, major cultural centres like Ubud in central Bali, Kintamani, Lake Batur and Lovina resort in the north and the national park in the west. Table II.2 shows that the types of tourism attractions available in Bali are numerous. Beaches, temples, cultural ceremonies and traditional villages, volcanic landscapes and monkey forests are abundant on the island. The Besakih Mother Temple is located in the east and lies at the foot of Mt Agung, Bali's highest mountain.

The Indonesian central government has identified six priority natural tourism objects in Bali. These are :

- Taman Hutan Raya Ngurah Rai (forestry park)

- Cagar alam Sangeh (monkey forest)
- Tanah Lot (beach and temple)
- Pantai Sanur (beach)
- Pantai Kuta (beach)
- Taman Nasional Bali Barat (national park)

(Department of Tourism, Post & Telecommunications 1998)

TABLE II.2 BALI TOURISM ATTRACTIONS

	Name	*Description*
1	Pulaki	Monkey temple and hot springs
2	Pulau Menjangan	Part of Bali Barat National Park
3	Putung	Scenic lookout
4	Rambut Siwi	Biggest temple in West Bali
5	Sangeh	Nutmeg forest, monkeys and Bukit Sari Temple
6	Air Sanih	Tranquil beach
7	Alas Kedaton	Temple surrounded by monkey forest
8	Amlapura	Principal city of Karangasem district with Raja's Palace
9	Bangli	Kehen Temple
10	Banjar	Hot springs
11	Batubulan	Stone carving and Barong dance
12	Batur	Mt. Batur active volcano and lake
13	Batukaru	Temple
14	Bedugal	Lake temple Beratan in mountains
15	Besakih	The Mother Temple on Mt. Agung
16	Bona	Palm leaf and bamboo handicrafts
17	Bukit Jambul	Rice terraces scenery
18	Candi Dasa	White-sand beach
19	Canggu	Surf beach
20	Celuk	Gold and silver artshops
21	Delod Berawah	Beach
22	Denpasar	Capital city—shopping, markets, museums and art centres
23	Gianyar	Old residence of former Raja of Gianyar
24	Gilimanuk	West seaport for Bali–Java ferry service
25	Gitgit	Waterfall
26	Goa Gajah	Ancient heritage—Elephant Cave

Continued on next page

TABLE II.2 BALI TOURISM ATTRACTIONS (continued)

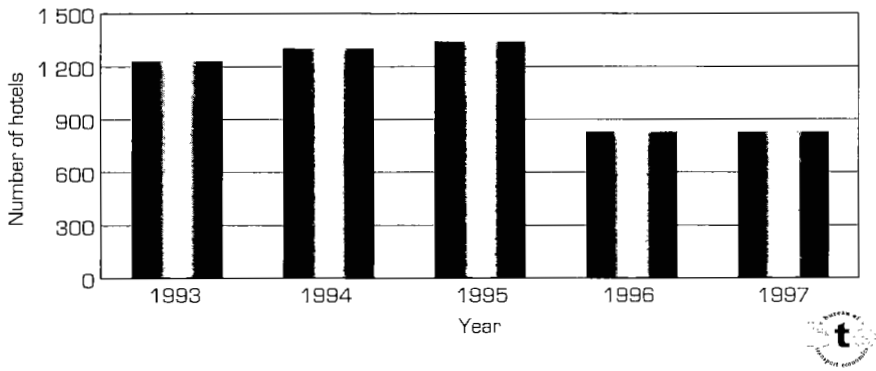
	Name	*Description*
27	Goa Lawah	Bat cave
28	Gunung Kawi	Ancient memorial of Balinese rulers
29	Jatiluwih	Spectacular rice terrace views
30	Jungutbatu	White-sand beach for surfers and divers
31	Kamasan	Traditional paintings, gold and silver, brassworks
32	Kebun Raya Bedugal	Botanical garden
33	Kerambitan	Royal Palace
34	Kintamani	Temple and mountains
35	Kusamba	Fisherman's village with salting grounds
36	Kuta	Tourist beach resort
37	Lovina Beach	Tourist beach resort
38	Mas	Woodcarving and other handicrafts
39	Medewi	Surf beach
40	Nusa Dua	5 star resort
41	Padangbai	Ferry to Lombok
42	Pancasari	Best golf course
43	Pejeng	Penataran Sasih Temple
44	Peliatan	Legong and Kecak dances and woodcarvings
45	Penelokan	Lookout for volcano and Lake Batur
46	Semarapura	Old court of justice 'Kerta Gosa'
47	Sanur	Tourist beach resort
48	Serangan Island	'Turtle Island'—diving and Sakenan Temple
49	Singaraja	Old manuscripts on palmleaf
50	Sukawati	Art market
51	Suluban	Surf beach
52	Tampaksiring	Holy Spring Temple and State Palace
53	Tanah Lot	Scenic temple / sunset watching
54	Tenganan	Ancient village (ikat handwoven cloth called 'gringsing')
55	Tirta Gangga	Old royal bathing place
56	Toya Bungkah	Hot spring bathing place by Lake Batur
57	Trunyan	Ancient village (ikat handwoven cloth called 'gringsing')
58	Tulamben	Diving area (S.S.*Liberty* wreck)
59	Ubud	Painting and art
60	Uluwatu	Temple on edge of cliff
61	West Bali National Park	70 000 ha famous for white starling and wild bull
62	Yeh Pulu	Ancient reliefs on rock wall

Source Department of Tourism, Post and Telecommmunications Regional Office Bali (1996).

Accommodation

Figure II.1 shows that the number of hotels in Bali has fallen significantly during 1993–97. However, the number of rooms available has only experienced a slight fall during the same period.

FIGURE II.1 PLACES TO STAY IN BALI, 1993–1997



Source Table II.3.

Passenger transport infrastructure

Air transport infrastructure

Ngurah Rai Airport

Runway length:	3000m
Runway width:	45m
Capacity:	B747
Taxiway:	1750m x 30m (80.342m2)
Apron:	4 x B747, 6 x MD11, 22 x A320 (180 x 100m, 513 x157m, 84 x 42.5m) (126.730m^2)
Terminal:	Domestic 9.034m^2, International 28.848m^2

(Directorate General Air Communications 1997b)

Road transport infrastructure

Approximately 58 per cent of Bali's roads are asphalt and only 36 per cent are reported to be in good condition, as illustrated in Figure II.2 and Figure II.3.

TABLE II.3 ACCOMMODATION IN BALI, 1993–1997

Classification	1993		1994		1995		1996		1997	
	No. of hotels	No. of rooms	No. of hotels	No. of rooms	No. of hotels	No. of rooms	No. of hotels	No. of rooms	No. of hotels	No. of rooms
5 Star Diamond	5	2 333	5	2 382	5	2 333	5	2 333	5	2 333
5 Star	13	4 371	14	4 948	14	4 952	15	5 286	15	5 286
4 Star	6	1 234	9	1 747	9	1 790	10	1 975	10	1 975
3 Star	30	3 777	26	2 970	26	2 970	26	2 792	26	2 792
2 Star	18	1 208	26	1 710	26	1 655	26	1 714	26	1 714
1 Star	11	532	7	255	7	314	7	255	7	255
Sub-total	83	13 455	87	14 012	87	14 014	89	14 355	89	14 355
Non - Star	680	12 247	722	13 000	742	13 458	491	10 610	491	10 610
Cottage/Cabin	471	1 956	498	2 073	516	2 160	252	1 144	252	1 144
TOTAL	1 234	27 658	1 307	29 085	1 345	29 632	832	26 109	832	26 109

Source Department of Tourism, Post and Telecommunications Regional Office Bali (1997).

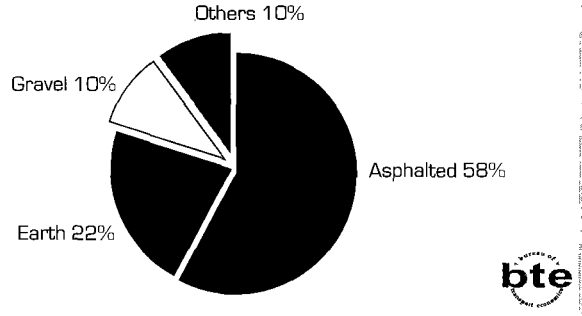
TABLE II.4 ROAD LENGTH IN BALI BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

(km)

	State	*Province*	*Regency*	*Municipality*	*Total*
1995					
Type of surface					
- asphalted	486	718	3 188	263	4 655
- gravel	0	0	573	113	686
- earth	0	0	1 626	89	1 715
- others	0	0	800	0	800
Total	486	718	6 187	465	7 856
Road condition					
- good	395	453	1 800	201	2 849
- moderate	81	207	1 795	104	2 187
- damaged	10	58	1 884	160	2 112
- badly damaged	0	0	708	0	708
Total	486	718	6 187	465	7 856
1996					
Type of surface					
- asphalted	395	748	3 236	277	4 656
- gravel	81	0	582	119	782
- earth	10	0	1 650	94	1 754
- others	0	0	812	0	812
Total	486	748	6 280	490	8 004
Road condition					
- good	395	472	1 827	212	2 906
- moderate	81	216	1 822	109	2 228
- damaged	10	60	1 912	169	2 151
- badly damaged	0	0	719	0	719
Total	486	748	6 280	490	8 004

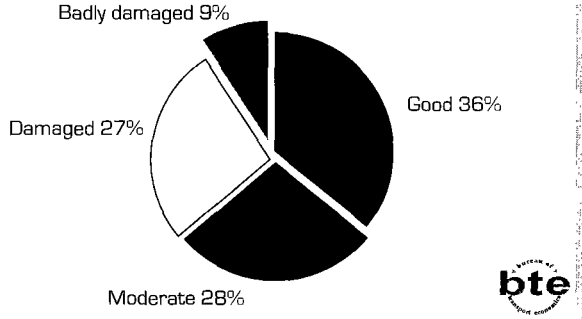
Source Central Bureau of Statistics (BPS) (1997a).

FIGURE II.2 BALI ROAD SURFACE, 1996



Source Table II.4.

FIGURE II.3 BALI ROAD CONDITION, 1996



Source Table II.4.

Ferry transport infrastructure

TABLE II.5 PORT INFRASTRUCTURE FACILITIES IN BALI

	Ketapang	*Gilimanuk*	*Lembar*	*Padangbai*
Berths	2	2	1	1
Port area (m^2)	24 024	30 739	–	–
Parking area	90 cars	75 cars	4 000m^2	5 425m^2
	48 buses	59 buses		
	135 trucks	90 trucks		
Passenger terminal (m^2)	2 997	1 830	–	–

Source Ministry of Communications Regional Office Bali pers. comm. Dec. 1997; State Owned Enterprise for River/Lake Crossing Padangbai Bali pers. comm. Dec. 1997.

TABLE II.6 AIRLINES FLYING DIRECT TO BALI, 1996

No.	Name	Aircraft type	Flights per week	Seat capacity per flight	Seat capacity Total per week
1	Ansett Australia	A320	3	144	432
		B767	2	202	404
		B737	1	114	114
2	Air New Zealand	B767	2	202	404
3	Bouraq	B737	7	114	798
		HS748	7	48	336
4	China Airline	A300	4	244	976
5	Continental	DC10	4	250	1 000
6	Cathay Pacific	A330	4	314	1 256
7	DLH Lufthansa	B747	2	420	840
8	Eva Air	B767	1	202	202
9	Garuda	A300	24	244	5 856
		AB6	7	240	1 680
		MD 11	7	298	2 086
		DC10	13	250	3 250
		B747	12	420	5 040
		B737	2	114	228
10	Japan Asia Airline	DC10	7	250	1 750
11	Japan Air Lines	B747	7	420	2 940
		DC10	7	250	1 750
12	Korean Air	A300	1	244	244
13	Royal Dutch/KLM	B747	2	420	840
14	LTU Airways	B767	1	202	202
15	Malaysia Air S	B737	9	114	1 026
16	Merpati	B737	7	114	798
		CN 235	7	40	280
		F27	7	56	392
		F28	7	75	525
17	Qantas	B737	3	114	342
		B747	4	420	1 680
		B767	1	202	202
18	Royal Brunei	B757	2	148	296
19	Singapore Air	A300	7	244	1 708
20	Sempati Air	A300	7	244	1 708
		F100	7	103	721
		F27	7	56	392
		F70	1	70	70
		B737	2	114	228
21	Thai International	A300	3	244	732
		AB 6	4	244	976
		DC10	4	250	1 000

Source Department of Tourism, Post and Telecommunications Regional Office Bali (1997).

TABLE II.7 DOMESTIC AIR ROUTES–BALI, 1996

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
1	Denpasar–Jakarta	GA	MD11	9
			A300	25
			DC10	9
			B747	10
		MZ	B737	7
		SG	A300	9
2	Denpasar–Surabaya	GA	B737	7
		MZ	F28	35
			F27	3
			B737	8
		SG	F100	12
			B737	7
		BO	B737	19
3	Denpasar–Mataram	MZ	F27	17
			CN235	51
		SG	F27	21
			F100	12
		BO	HS748	28
4	Denpasar–Yogyakarta	GA	B737	35
		BO	B737	7
5	Denpasar–Maumere	MZ	F27	7
		BO	HS748	3
6	Denpasar–Waingapu	MZ	F27	3
		BO	HS748	4
7	Denpasar–Ujungpandang	GA	B737	7
		MZ	F28	3
8	Denpasar–Kupang	MZ	B737	7
			F28	7
9	Denpasar–Medan	GA	MD11	1
10	Denpasar–Dili	MZ	F27	7
11	Denpasar–Bima	MZ	F27	1

GA = Garuda
MZ = Merpati
SG = Sepati
BO = Bouraq

Source Directorate General Air Communications (1997a).

Sea transport infrastructure

Benoa seaport :

Berths : 1

Depth: 9m

TRANSPORT SERVICES

What routes exist?

Air transport

Ngurah Rai in Denpasar is one Indonesia's major international gateways, with extensive international and domestic routes. Table II.6 shows the airlines which flew direct to Denpasar in 1996 as well as aircraft types, frequencies and seat capacities. Table II.7 shows the domestic air routes which operated in Bali in 1996.

Ferry transport

Some cruise ships (32 in 1996) berth at Padangbai because it is deeper than Benoa port, but Padangbai predominantly handles local ferry traffic (Field Notes, Padangbai Port, 17/12/97).

TABLE II.8 BALI FERRY ROUTES

Ketapang (East Java) – Gilimanuk (Bali)
Padangbai (Bali) – Lembar (Lombok)
Padangbai (Bali) – Labuhanlombok (Lombok)

Source Ministry of Communications Bali pers. comm. Dec. 1997; Ministry of Communications Bali Regional Office (1997).

Sea transport

Benoa seaport is used by ships, fast ferries/fast ships and cruise lines. Benoa receives around 10 cruise ship calls per year (Field Notes, Benoa port, 17/12/97). The Perintis (pioneer) routes in Table II.10 only apply for the busy Lebaran season (end of Ramadan). Normally Benoa handles only cruise and Pelni ships, not pioneer. There are five Pelni ships or routes which visit Bali's port (Benoa). For more detail on these routes see Appendix 1.

TABLE II.9 KETAPANG–GILIMANUK FERRY ROUTE

	Name of Ship	*Private Operator*	*Type*	*Age*	*GRT*	*Passenger capacity*
1	KMP. *Gajah Mada*	PT. ASDP (Persero)	ro-ro	1974	512	284
2	KMP. *Prathita*	PT. ASDP (Persero)	ro-ro	1968	459	370
3	KMP. *Gilimanuk I*	PT. Jemla Ferry	ro-ro	1964	733	224
4	KMP. *Gilimanuk II*	PT. Jemla Ferry	ro-ro	1990	840	374
5	KMP.C. *Mandala Satria*	PT. Jembatan Madura	ro-ro	1990	2 718	1 150
6	KMP.C. *Nusantara*	PT. Jembatan Madura	ro-ro	1992	952	330
7	KMP. *Rajawali Nusantara*	PT. Jembatan Madura	ro-ro	1989	485	260
8	KMP.C. *Mandala Abadi*	PT. Jembatan Madura	ro-ro	1971	580	377
9	KMP.C. *Mandala Nusantara*	PT. Jembatan Madura	ro-ro	1992	952	400
10	KMP. *Trisila Bakti I*	PT. Trisila Laut	ro-ro	1996	585	300
11	KMP. *Edha*	PT. Lintas Sarana N	ro-ro	1967	456	300
12	KMP. *Nusa Dua*	PT. Putra Master	ro-ro	1982	536	202
13	KMP. *Nusa Makmur*	PT. Putra Master	ro-ro	1990	497	264
14	KMP. *Pertiwi Nusantara*	PT. Jembatan Madura	ro-ro	1985	605	250
15	KMP. C. *Mandala Bakti*	PT. Jembatan Madura	ro-ro	1982	432	268
16	KMP. *Dharma Bajra*	PT. Dharma Lautan	ro-ro	1984	193	150
17	LCT. *Arjuna*	PT. Lintas Sarana N	LCT	1975	221	0
18	LCT. *Bhajta Gaturtya*	KSO. Pt.ASDP (Persero)	LCT	1983	536	0

Source Ministry of Communications Regional Office Bali pers. comm. Dec. 1997.

TABLE II.10 PERINTIS ROUTES, 1997, LEBARAN SEASON

Benoa (Bali)- Lembar (Lombok) - Badas - Bima - Komodo (Nusa Tenggara Timur)
Benoa - Nusa Lembongan
Tanjung Benoa - Toya Pakeh - Nusa Penida
Tanjung Benoa - Selat Badung
Benoa - Nusa Lembongan - Lombok
Benoa - Maumere (Nusa Tenggara Timur)
Benoa - Lembar (Lombok)
Benoa - Nusa Lembongan - Sumbawa
Benoa - Nusa Penida - Lombok

Source Ministry of Communications pers. comm. Dec. 1997.

Frequency and travel time

Air

See Table II.6 and Table II.7 for flights per week, aircraft type and seat capacity.

Ferry

TABLE II.11 BALI FERRY ROUTES FREQUENCIES AND TRAVEL TIME

	Gilimanuk-Ketapang	*Padangbai-Lembar*
Berth capacity	2 000 GRT	1 000 GRT
Total trips per day	144	12
Travel time	45 mins	4 hours

Source Ministry of Communications Bali Regional Office (1997) and field notes.

Sea

The frequency of Pelni routes is shown in Appendix 1. All routes maintain a 14-day round voyage.

The fast ferries/ships which operate between Bali and Lombok do not operate all year round. The vessels are also used on the Batam-Singapore route in Western Indonesia (Directorate General Sea Communications pers. comm. Dec 1997). In general, fast ferries/ships do not follow a fixed schedule—frequency depends on seasonal demands.

Road

TABLE II.12 BALI ROAD ROUTES AND TRAVEL TIMES

Route	*Travel time*
Denpasar – Petang – Sangeh	30 mins (20km)
Denpasar – Kediri – Tanah Lot	50 mins
Denpasar – Sanur	12 mins
Denpasar – Kuta	20 mins

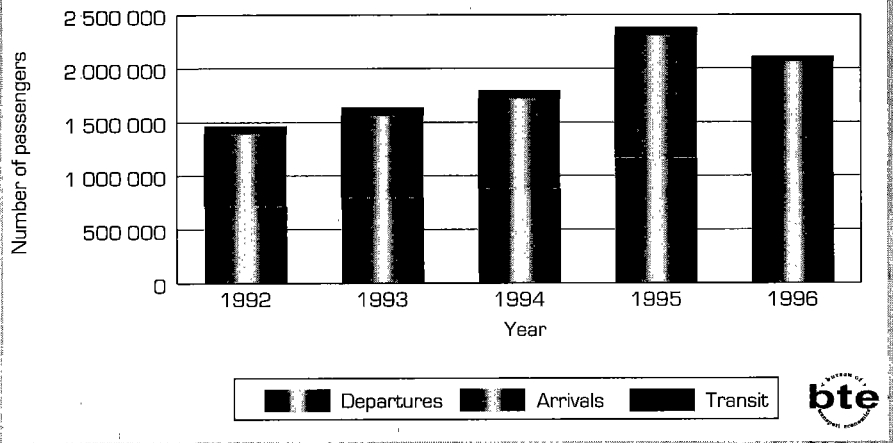
Source Field notes.

CURRENT AND HISTORIC DEMAND

Passenger transport

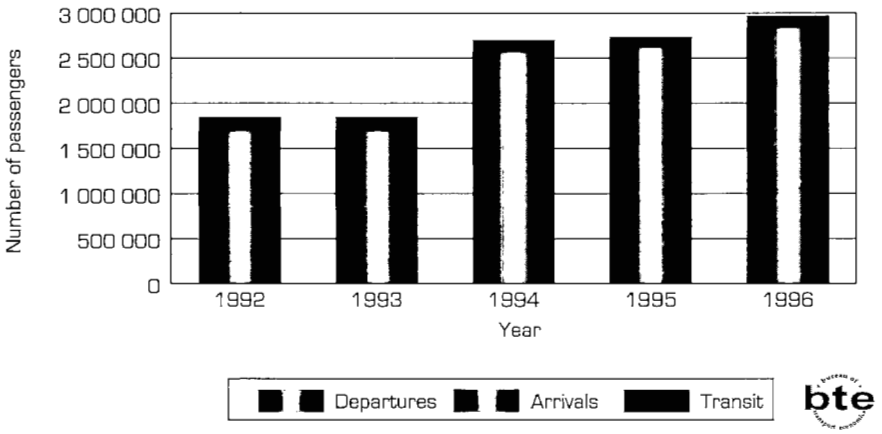
Air transport

FIGURE II.4 NGURAH RAI DOMESTIC PASSENGERS, 1992–1996



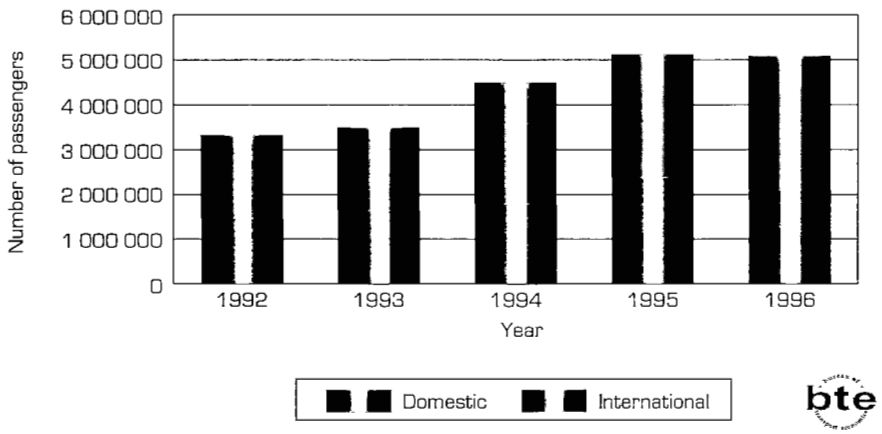
Source Table II.13.

FIGURE II.5 NGURAH RAI INTERNATIONAL PASSENGERS, 1992–1996



Source Table II.13.

FIGURE II.6 NGURAH RAI TOTAL PASSENGERS, 1992–1996



Source Table II.13.

TABLE II.13 NUMBER OF FLIGHTS AND PASSENGERS—NGURAH RAI AIRPORT

Year	Flights Departures	Arrivals	Total	Passengers Departures	Arrivals	Transit	Total
DOMESTIC							
1996	18 352	18 483	36 835	1 028 136	1 038 571	47 486	2 114 193
1995	18 209	18 119	36 328	1 167 345	1 141 765	79 718	2 388 828
1994	17 407	17 525	34 932	881 296	841 023	77 739	1 800 058
1993	18 600	17 188	35 788	798 697	766 186	78 212	1 643 095
1992	15 536	15 346	30 882	716 638	679 786	73 802	1 470 226
INTERNATIONAL							
1996	11 655	11 479	23 134	1 543 337	1 288 755	136 691	2 968 783
1995	10 534	10 370	20 904	1 379 830	1 235 918	117 058	2 732 806
1994	8 841	9 589	18 430	1 321 516	1243 123	134 930	2 699 569
1993	8 693	6 335	15 028	855 569	838 209	154 813	1 848 591
1992	6 489	6 335	12 824	855 569	838 209	154 813	1 848 591
TOTAL (Domestic and international terminals)							
1996	30 007	29 962	59 969	2 571 473	2 327 326	184 177	5 082 976
1995	28 743	28 489	57 232	2 547 175	2 377 683	196 776	5 121 634
1994	27 441	27 108	54 549	2 238 213	2 092 399	213 994	4 544 606
1993	27 293	25 434	52 727	1 896 525	1 834 034	180 324	3 910 883
1992	22 025	21 681	43 706	1 572 207	1 517 995	228 615	3 318 817

Source Council of Development Planning Regional Office Bali (1997b).

Ferry transport

The load factor on Padangbai ferries is estimated to be 26 per cent (Field Notes).

TABLE II.14 FERRY ROUTE PASSENGERS AND FORECASTS

	Gilimanuk-Ketapang	*Padangbai-Lembar*
Passengers		
1994	4 063 509	914 370
1995	4 859 457	974 821
1996	4 659 493	922 704
2000	5 650 000	1 537 000
2005	6 804 000	1 930 000
2010	7 960 000	2 324 000

Source Ministry of Communications Bali Regional Office (1997).

TABLE II.15 PADANGBAI FERRY PORT PASSENGERS, 1991-1997

	Total passengers (embarking)	*End of Ramadan period*	*Xmas and New Year period*
1991	407 112	-	-
1992	428 571	28 415	20 071
1993	445 817	27 911	30 009
1994	474 863	38 190	33 530
1995	503 613	38 597	27 039
1996	488 482	39 490	23 930
1997	-	37 503	-

Source State Owned Enterprise for River/Lake Crossing Padangbai Bali pers. comm. Dec. 1997.

TABLE II.16 LEMBAR FERRY PORT PASSENGERS, 1991-1997

	Total passengers (disembarking)	*End of Ramadan period*	*Xmas and New Year period*
1991	372 167	-	-
1992	401 025	30 033	27 704
1993	403 904	30 641	26 021
1994	439 507	33 423	30 151
1995	471 208	39 565	24 781
1996	434 222	34 966	19 450
1997	-	35 521	-

Source State Owned Enterprise for River/Lake Crossing Padangbai Bali pers. comm. Dec. 1997.

TABLE II.17 TOURIST PASSENGERS ON FERRIES—PADANGBAI PORT

	Regular ferry routes	*Special routes (cruises)*	
	Passengers	*Passengers*	*No. of trips*
1993	50 680	15 416	25
1994	60 968	17 815	35
1995	79 826	23 041	46
1996	90 404	15 795	32
1997	89 563	15 281	33

Source State Owned Enterprise for River/Lake Crossing Padangbai Bali pers. comm. Dec. 1997.

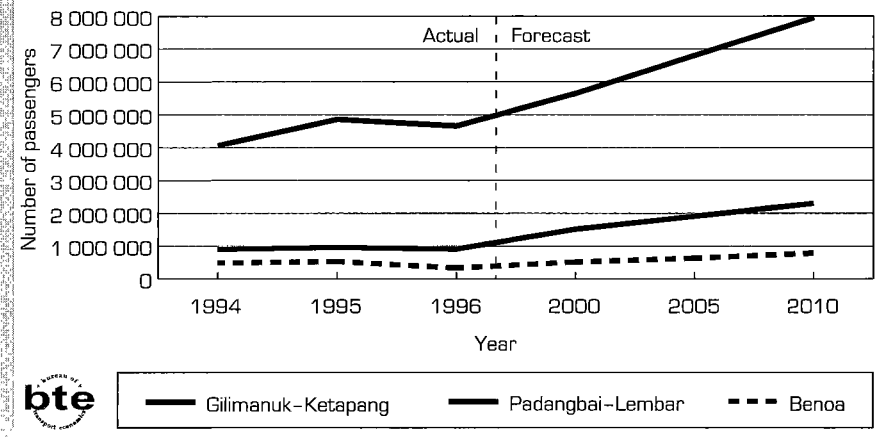
TABLE II.18 PADANGBAI PORT—FOREIGN TOURISTS

		Passengers			
Year	*Total ships*	*Disembark*	*Transit*	*Embark*	*GRT*
1992	27	1 142	9 788	330	546 284
1993	43	1 542	15 128	1 481	735 432
1994	47	931	20 643	1 146	856 029
1995	35	427	16 064	509	745 493
1996	32	591	4 828	432	712 053
1997*	22	130	833	32	43 891

* Until end of November

Source Benoa Port Administrator pers. comm. Dec. 1997.

FIGURE II.7 BALI FERRY AND SEA ROUTES: PASSENGERS AND FORECASTS



Source Ministry of Communications Bali Regional Office 1997.

Sea transport

TABLE II.19 BENOA PORT PASSENGERS AND FORECASTS

	Passengers	*Ship calls*
1994	481 687	7 707
1995	528 426	9 079
1996	329 979	7 884
2000	511 745	1 532
2005	631 665	1 790
2010	779 683	2 092

Source Ministry of Communications Bali Regional Office (1997).

TABLE II.20 BENOA PORT PASSENGERS, 1995–1997

		General passengers		*Local tourist ships*		*International cruise ships*	
	Ship calls	*Disemb*	*Embark*	*Disemb*	*Embark*	*Disemb*	*Embark*
1995							
Jan	314	4 871	3 432	13 188	13 688	652	657
Feb	294	359	3 228	18 326	19 743	627	801
Mar	320	9 225	8 411	13 328	13 666	1 700	1 700
Apr	268	5 342	5 403	13 773	13 421	465	433
May	280	4 446	3 460	10 290	10 197	210	147
Jun	282	4 092	4 017	14 309	13 402	-	-
Jul	390	9 676	10 694	17 774	20 053	6	-
Aug	262	9 745	10 491	20 021	18 219	216	377
Sep	259	5 457	8 191	10 400	10 265	-	-
Oct	221	5 976	5 539	9 949	12 239	8	9
Nov	301	4 707	3 883	10 910	12 154	74	139
Dec	209	3 789	3 972	10 845	12 230	56	120
TOTAL	3 400	67 685	70 721	163 113	169 277	4 014	4 383

Continued on next page

TABLE II.20 BENOA PORT PASSENGERS, 1995–1997 (continued)

		General passengers		Local tourist ships		International cruise ships	
	Ship calls	Disemb	Embark	Disemb	Embark	Disemb	Embark
1996							
Jan	337	1 737	1 152	14 298	14 144	1 297	1 334
Feb	220	2 242	1 300	17 287	15 362	1 386	1 110
Mar	326	3 664	4 332	12 929	13 945	680	653
Apr	397	4 793	4 539	15 061	16 005	476	126
May	367	3 962	3 816	14 821	14 346	-	-
Jun	316	6 096	5 940	16 067	15 835	-	-
Jul	436	7 889	4 074	17 519	18 264	-	-
Aug	422	7 298	7 040	22 026	21 217	620	601
Sep	328	5 413	6 429	13 397	13 452	-	-
Oct	294	5 897	4 963	16 018	15 924	37	36
Nov	299	4 241	4 312	11 915	11 272	208	260
Dec	281	5 599	5 923	9 660	8 973	688	322
TOTAL	4 023	58 831	53 820	180 998	178 739	5 392	4 442
1997							
Jan	221	5 593	3 714	10 110	9 858	669	568
Feb	260	3 753	5 585	11 455	11 401	898	766
Mar	275	4 649	7 269	13 223	12 693	470	1 193
Apr	289	2 657	3 649	11 783	11 123	4	72
May	305	2 054	1 917	11 359	11 181	7	1
Jun	309	5 727	4 399	10 433	9 935	73	6
Jul	287	6 481	6 912	10 823	10 054	294	552
Aug	275	5 235	4 706	10 994	10 686	267	158
Sep	415	6 891	5 008	11 106	10 665	437	423
Oct	325	7 299	4 323	12 187	11 743	576	414
Nov	327	5 711	3 575	10 574	10 854	327	311
Dec	-	-	-	-	-	-	-
TOTAL	3 288	56 050	51 057	124 047	120 193	4 022	4 464

Source Benoa Port Administrator pers. comm. Dec. 1997.

Tourism demand

Approximately 10 per cent of incoming tourists to Bali also visit other parts of Indonesia. International tourists travelling to Lombok mostly travel by air or fast ferry. Some adventure and backpack tourists use the regular ferries (Field Notes).

TABLE II.21 TOTAL NUMBER OF FOREIGN TOURISTS TO BALI BY NATIONALITY, 1993–1997

Number	*Nationality*	*1993*	*1994*	*1995*	*1996*	*1997*
1	America	49 193	60 818	95 422	73 802	25 289
2	Canada	8 953	13 213	12 153	15 143	12 141
3	Austria	9 589	11 646	6 753	6 463	2 499
4	Belgium	4 384	7 172	20 542	24 167	4 809
5	Denmark	4 294	8 642	4 472	4 363	1 713
6	France	24 313	26 675	42 682	41 892	10 912
7	Germany	77 179	94 909	82 195	97 849	51 693
8	Italy	35 795	38 175	44 168	44 370	10 607
9	Netherlands	20 664	25 520	52 026	53 552	8 424
10	Spain and Portugal	10 897	12 057	5 500	3 769	3 540
11	Sweden, Norway & Finland	13 096	22 925	189 970	25 362	13 747
12	Switzerland	24 902	32 701	15 790	16 414	9 252
13	England	91 316	103 243	88 187	83 932	43 542
14	Malaysia	10 664	12 445	43 827	46 569	18 305
15	Philippines	1 680	3 115	11 103	12 540	16 492
16	Singapore	25 340	24 998	25 592	23 014	19 280
17	Thailand & Brunei	8 214	10 164	29 194	35 055	7 438
18	Australia	160 769	159 239	144 420	181 226	116 822
19	Hong Kong	4 249	4 351	4 951	2 703	290
20	Japan	173 863	211 100	112 227	163 824	104 825
21	Korea (South)	11 842	14 874	29 876	52 327	19 977
22	New Zealand	24 283	25 101	11 274	13 057	6 805
23	Taiwan	71 019	81 993	80 112	98 505	47 815
24	Other	19 018	27 400	33 878	40 757	24 881
TOTAL		885 516	1 032 476	1 186 314	1 160 655	581 098 (1 162 196)[a]

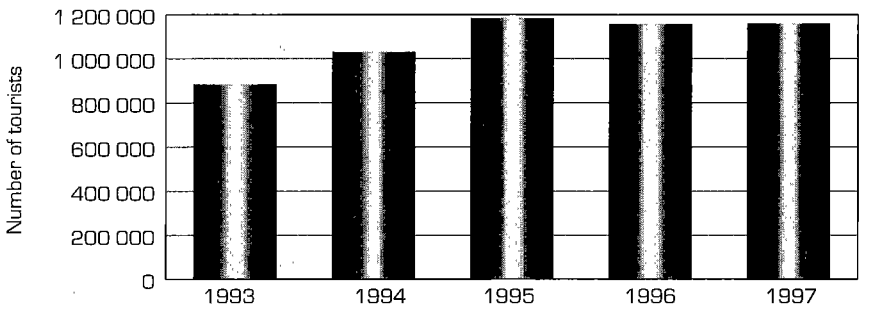
Note 1997 January–June only.

a. 1997 total estimate (prorated).

Source Department of Tourism, Post and Telecommunications Regional Office Bali (1997).

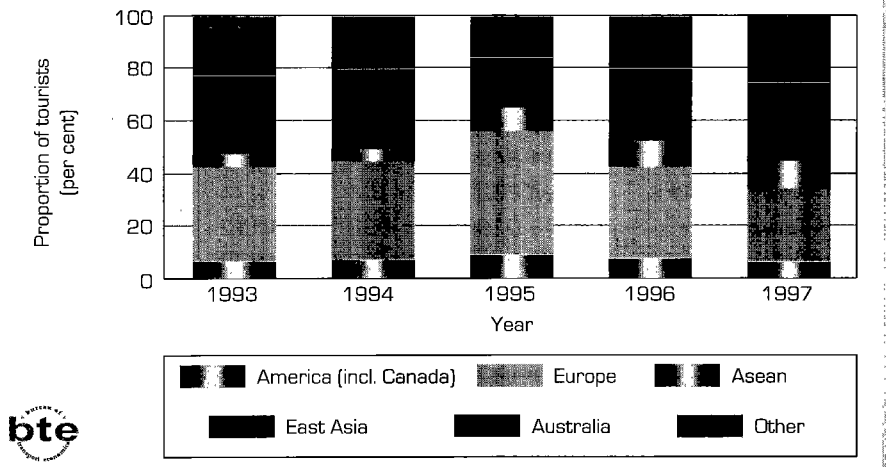
Figure II.8 shows that the number of international tourists visiting Bali increased steadily until 1995 but has fallen and remained relatively constant until 1997. Figures II.9 and II.10 show the area of origin of foreign tourists to Bali. East Asia and the ASEAN together accounted for the largest proportion (41 per cent), followed by Europe (28 per cent) and Australia (20 per cent).

FIGURE II.8 TOTAL FOREIGN TOURISTS TO BALI, 1993–1997



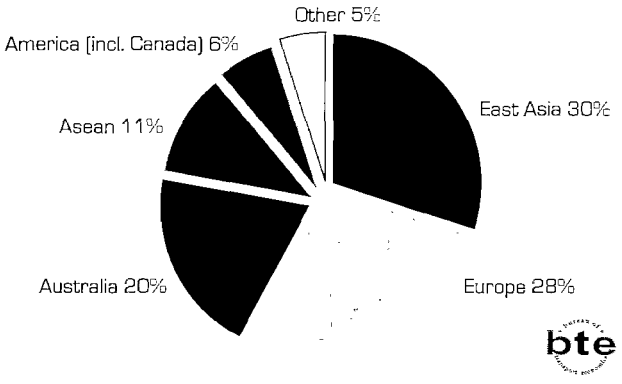
Source Table II.21.

FIGURE II.9 ORIGIN OF FOREIGN TOURISTS TO BALI, 1993–1997



Source Table II.22.

FIGURE II.10 ORIGIN OF FOREIGN TOURISTS TO BALI, 1997



Source Table II.22.

TABLE II.22 AREAS OF ORIGIN FOR TOURISTS TO BALI, 1993–1997

	Area	*1993*	*1994*	*1995*	*1996*	*1997*
1	America (incl. Canada)	58 146	74 031	107 575	88 945	37 430
2	Europe	316 429	383 665	552 285	402 133	160 738
3	ASEAN	45 898	50 722	109 716	117 178	61 515
4	East Asia	260 973	312 318	227 166	317 359	172 907
5	Australia	160 769	159 239	144 420	181 226	116 822
6	Other	43 301	52 501	45 152	53 814	31 686
TOTAL		885 516	1 032 476	1 186 314	1 160 655	581 098* (1 162 196)[a]

*Note** 1997 January–June only.

a. 1997 total estimate (prorated).

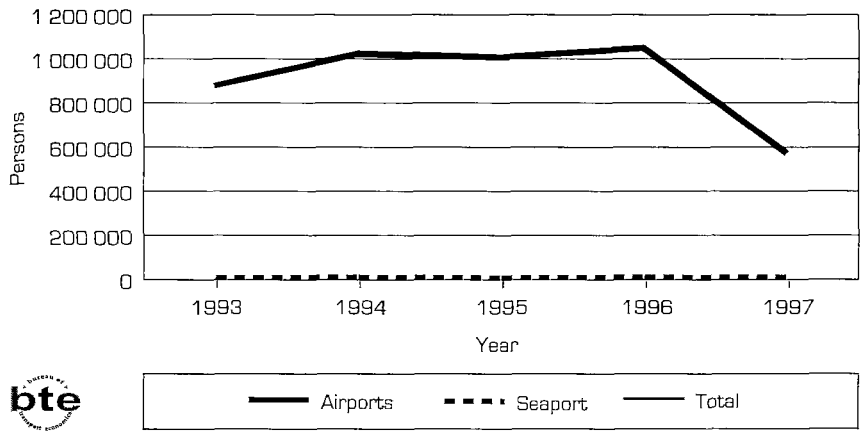
Source Department of Tourism, Post and Telecommunications Regional Office Bali (1997).

TABLE II.23 TOTAL NUMBER OF VISITS BY FOREIGN TOURISTS DIRECT TO BALI BY AIR AND SEA

		1993			1994			1995			1996			1997		
No.	Month	Airport	Seaport	Total	Airport	Seaport	Total	Airport	Seaport	Total	Airport	Seaport	Total	Airport	Seaport	Total
1	January	73 667	1 977	75 644	70 741	3 155	73 896	86 424	1384	87 808	73 120	1 274	74 394	81 418	1 805	83 223
2	February	56 734	1 899	58 633	83 527	3 841	87 368	83 218	3 349	86 567	83 149	4 951	88 100	93 021	4 435	97 456
3	March	61 737	1 878	63 615	75 148	2 429	77 577	71 742	458	72 200	91 694	1 895	93 589	108 812	3 902	112 714
4	April	67 454	603	68 057	78 901	-	78 901	75 696	0	75 696	84 561	606	85 167	90 640	0	90 640
5	May	69 557	0	69 557	73 885	38	73 923	64 880	652	65 532	80 733	0	80 733	91 924	0	91 924
6	June	72 563	0	72 563	74 186	-	74 186	73 283	483	73 766	98 261	0	98 261	105 141	0	105 141
7	July	84 285	0	84 285	103 677	303	103 980	99 099	0	99 099	110 751	0	110 751			
8	August	89 835	0	89 835	102 899	-	102 899	103 727	48	103 775	11 408	51	11 459			
9	September	80 684	151	80 835	99 148	198	99 346	94 394	213	94 607	126 856	0	126 856			
10	October	75 636	592	76 228	90 281	421	90 702	90 476	0	90 476	101 734	285	102 019			
11	November	71 304	0	71 304	82 222	60	82 282	77 517	1 399	78 916	90 261	668	90 929			
12	December	73 376	1 584	74 960	86 804	612	87 416	85 375	1 475	86 850	94 979	808	95 787			
Total		876 832	8 684	885 516	1021 419	11 057	1032 476	1005 831	8 077	1015 292	1047 507	10 538	1058 045	570 956	10 142	581 098

Source Department of Tourism, Post and Telecommunications Regional Office Bali (1997).

FIGURE II.11 TOURISTS TO BALI BY AIR AND SEA, 1993–1997



Source Table II.23.

TABLE II.24 NUMBER OF FOREIGN TOURISTS TO BALI BY VISA TYPE, 1992–1996

Year	*No visa required*	*Tourist visa*	*Business visa*	*Social/cultural visa*	*Total*
Entering Bali					
1996	1 110 653	14 557	12 980	617	1 138 807
1995	986 853	13 871	12 142	904	1 013 770
1994	1 009 536	10 255	10 077	1 115	1 030 983
1993	864 264	8 631	10 133	1 178	884 206
1992	720 095	6 349	8 226	1 957	736 627
Exiting Bali					
1996	1 317 690	14 614	14 459	234	1 346 997
1995	1 156 744	15 684	13 615	535	1 186 578
1994	1 009 536	10 255	10 077	1 115	1 030 983
1993	864 264	8 631	10 077	1 178	884 150
1992	720 095	6 349	8 226	1 957	736 627

Source Council of Development Planning Regional Office Bali (1997b).

TABLE II.25 DURATION OF STAY AND EXPENDITURE PER DAY OF FOREIGN TOURISTS, 1992–1996

Year	*Duration of stay (days)*	*Expenditure per day ($US)*
1996	9.2	83.92
1995	9.3	85
1994	10	134.66
1993	10.3	70.29
1992	10.8	50

Source Council of Development Planning Regional Office Bali (1997b).

TABLE II.26 TOTAL AMOUNT OF $US EXCHANGED

Bank Indonesia Denpasar	
1993	1 049 675 000
1994	1 221 866 000
1995	1 312 655 000
1996	1 313 466 000
1997 (end June)	706 599 000

Source Department of Tourism, Post and Telecommunications Regional Office Bali (1997).

TABLE II.27 AVERAGE HOTEL OCCUPANCY RATES—BALI, 1993–1997

	1993	*1994*	*1995*	*1996*	*1997*
Average %	59.94	62.87	61.49	61.64	52.3

Source Department of Tourism, Post and Telecommunications Regional Office Bali (1997).

FUTURE TOURISM AND TRANSPORT DEMAND

TABLE II.28 PROJECTION OF NUMBER OF HOTEL ROOMS NEEDED IN BALI, 1994–1998

Number	*Year*	*Projection (starred or non-starred)*
1	1994	30 000
2	1995	32 000
3	1996	35 000
4	1997	38 000
5	1998	41 000

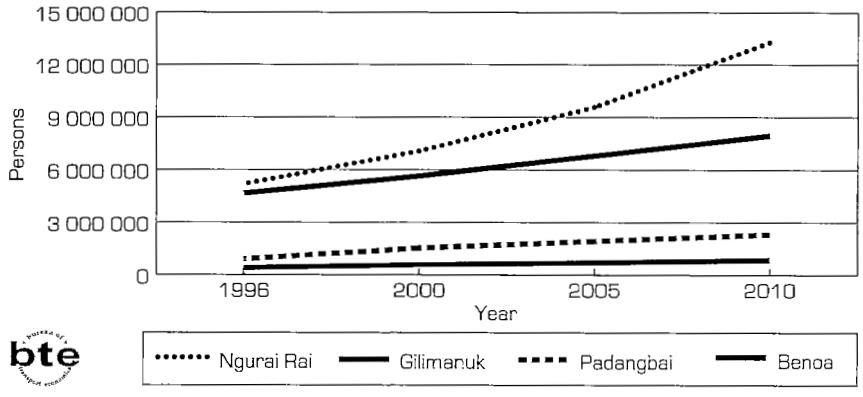
Source Department of Tourism, Post and Telecommunications Regional Office Bali (1997).

TABLE II.29 FERRY PORT AND AIRPORT PASSENGER PROJECTIONS TO 2010

	1996	*2000*	*2005*	*2010*
Gilimanuk	4 659 000	5 650 000	6 804 000	7 960 000
Padangbai	900 000	1 537 000	1 930 000	2 324 000
Benoa	330 000	512 000	632 000	780 000
Ngurai Rai	5 118 000	7 000 000	9 500 000	13 200 000
TOTAL	11 007 000	14 699 000	18 866 000	24 264 000

Source Ministry of Communications Bali Regional Office (1997).

FIGURE II.12 PASSENGER PROJECTIONS TO 2010



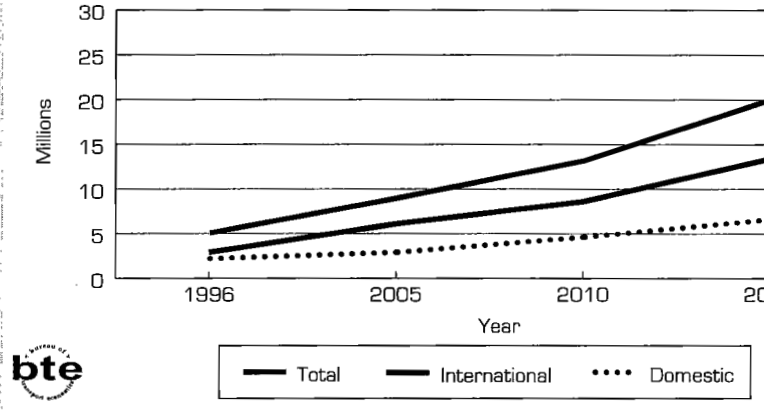
Source Ministry of Communications Bali Regional Office (1997).

TABLE II.30 NGURAH RAI DEMAND FORECASTS TO 2018

		Present (1996)	*Phase II (2005)*	*Phase III (2010)*	*Phase IV (2018)*
1 Annual passengers (million)	International	2.9	6.1	8.6	13.4
(excluding transit)	Domestic	2.2	2.9	4.6	6.6
	Total	5.1	9	13.2	20
2 Annual aircraft movements	International	2.3	40	50.4	72.5
(thousand)	Domestic	3.6	41.1	50.1	65
	Total	5.9	81.1	100.5	137.5
3 Peak hour passengers	International	2 100	2 220	2 400	3 300
(one way, excl. transit)	Domestic	1 210	1 060	1 300	1 900
	Total	3 310	3 280	3 700	5 200
4 Peak hour aircraft movements	International		19	20	25
(two ways)	Domestic		15	18	23
	Total	23	34	38	48
5 Runway length (m)		3 000	3 000	3 600	4 000
6 Apron (aircraft stand)	B747	4	5	6	8
	MD11	6	14	13	23
	A320	22	16	23	25
	Total	32	35	42	56

Source Ministry of Communications Bali Regional Office (1997).

FIGURE II.13 NGURAH RAI PASSENGER FORECAST (EXCLUDING TRANSIT)



Source Ministry of Communications Bali Regional Office (1997).

PLANNED DEVELOPMENTS

Tourism

The future direction of tourism in Bali, starting with the next Repelita, is to spread out the development of hotels and diffuse tourism across Bali especially in the west (Field Notes, Regional Office of Tourism, 15/12/97).

There are 21 planned tourism objects in Bali shown in Table II.31 Among these, four are already developed in that the availability of facilities such as water, accommodation, electricity, telecommunications and so on is well established (e.g. Kuta). Seven areas are classified as developing; they are less established but still reasonably developed (e.g. Tanah Lot). The rest are undeveloped and basic facilities are lacking.

TABLE II.31 NUMBER AND STATUS OF TOURIST SITES/AREAS BY KABUPATEN, 1996

	Status/Condition			
Kabupaten	*Developed*	*Developing*	*Undeveloped*	*Total*
Badung	3	-	-	3
Denpasar	1	-	-	1
Bangli	-	1	-	1
Buleleng	-	2	1	3
Gianyar	-	1	1	2
Jembrana	-	-	4	4
KlungKung	-	-	1	1
Karangasem	-	1	2	3
Tabanan	-	2	1	3
Total	4	7	10	21

Source Council of Development Planning Regional Office Bali (1997b).

Transport

Table II.30 also shows planned aviation developments to extend the runway from 3000 metres at present to 3600 metres in 2010 and 4000 metres by 2018. The capacity of the apron is also planned to be extended in line with runway extensions. The passenger terminal capacity may also be extended by splitting domestic and international

passengers and building a new international terminal during phase III of the development plan (Field Notes, Ministry of Communications Regional Office, 15/12/97). The new international terminal is planned to be constructed on the eastern side of the airport and will require some reclamation of land from the sea. The existing international terminal will be used for domestic passengers.

According to the master plan for Benoa port, by 2010 the port will be deepened from 9 to 12 metres and a separate passenger berth (1000 metres) will be built. Currently, cargo and passengers are unloaded at the same berth (Field Notes, Benoa Port, 17/12/97).

The Directorate General of Land Transport (DGLT) has also advised that two new ferries [KM. Kencana 1 (250GRT) and KM. Kencana 2 (150GRT)] are now under construction and will be used on the Padangbai–Lembar route. These ferries will be operated by the private company PT. Prima Kencana.

DEVELOPMENT ISSUES/PROBLEMS

- Concern about the carrying capacity of Bali, especially with respect to services such as water.
- Sustainable development issues.
- Quality issues.
- Public transportation is inefficient—there is no public transport to many tourism sites.
- Congestion problems.
- Cumbersome regulations.
- There is no cross-town transport—Denpasar is the transport hub and people must come to Denpasar to go anywhere else.
- Tourism infrastructure has over-capacity problems, which make it very cheap but also poor quality.
- Connections between transport modes are poor. (Field Notes, Chamber of Commerce, 16/12/97)
- Environmentally sustainable tourism—environmental protection issues. (Field Notes, Regional Development and Planning Office, 16/12/97)
- Shipping regulations—restrictive and an impediment to investment and operation.

- Tax system—creates disincentives.
  (Field notes, Spice Island Cruises, 16/12/97)
- Uneven development and distribution between regencies. (Council of Development Planning Regional Office Bali, 1997a, p. 8)
- Impact of tourism on culture.

APPENDIX III

NUSA TENGGARA TIMUR

INTRODUCTION

Geography

Nusa Tenggara Timur (NTT) is located to the east of Nusa Tenggara Barat and Bali, south of Sulawesi and borders the west of Timur Timor. It is an archipelago consisting of around 111 islands and an area of 47 876 square kilometres. This represents approximately 2.49 per cent of Indonesia's total area. The capital of the province is Kupang located on the south-western tip of Timor Island. Flores, Sumba and Timor are the biggest islands in NTT. The rainfall of NTT is the lowest in Indonesia.

Population

NTT's population stood at 3 269 000 in 1990 (the last year a census was held) with a population density of 68 persons per square kilometre and an average growth rate of 1.79 per cent (1980–1990). Over 80 per cent of the population of NTT are Christian. The 1995 Intercensal Population Survey estimated NTT's population had increased to 3 577 000 and the population density had risen to 75 persons per square kilometre. The population projection for 1996 was 3 640 900, with a density of 76 persons per square kilometre (Central Bureau of Statistics (BPS) 1998).

Economy

NTT is one of the poorest and least developed provinces in Indonesia. This is a result of its basic poverty of natural resources. GRDP can be seen in Table III.1. GRDP per capita in 1995 was Rp 690 966. Agriculture is the dominant sector in NTT.

TABLE III.1 GRDP OF NUSA TENGGARA TIMUR PROVINCE

(million rupiahs)[a]

No.	Sectors	Year			
		1993	*1994*	*1995*	*1996*
1	Agriculture	857 962	911 141	945 055	1 019 609
2	Mining and quarrying	32 612	35 776	42 029	46 030
3	Manufacturing industries	52 673	59 418	63 283	69 997
4	Electricity, gas and water supply	15 617	16 333	17 998	19 652
5	Construction	169 665	184 965	218 279	239 956
6	Trade, restaurant and hotel	262 190	269 563	307 434	354 431
7	Transport and communication	193 380	223 520	259 720	279 286
8	Finance, rent of building and business services	91 325	100 492	107 244	122 593
9	Service	421 392	474 966	510 546	527 546
Total		2 096 816	2 276 174	2 471 588	2 679 100

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TOURISM INFRASTRUCTURE

Tourist attractions

Where are they? What type?

There are six priorities for tourism development in NTT. These are:

- Kupang and surrounding area
- Maumere
- Kelimutu Lake
- Riung
- Komodo Island and Labuan Bajo
- Sumba

The Indonesian Regional Development and Planning Agency highlights these six areas because they include the major existing tourism attractions and the perceived potential future attractions. They believe the Kupang area, which includes Rote Island, has potential for both

marine tourism (for example diving) and cultural tourism, but its main advantage is its gateway location.

Maumere has potential as both a sea park with plenty of coral reefs and beaches and as a cultural attraction with traditional villages close by. Kelimutu is one of NTT's most popular and scenic tourist attractions. The uniqueness of this attraction is clear with its three crater lakes, all of different colours, situated on top of an inactive volcano. Riung's main attraction is the Seventeen Island National Park. With abundant coral reefs and marine life, its potential to attract the marine tourism market is considered very good.

Komodo Island National Park is NTT's most famous tourist attraction, with the only prehistoric giant lizard still surviving on earth. Labuan Bajo, situated close to Komodo, is a popular tourist destination attracting the marine tourism market with its mix of diving and beaches. Sumba is a priority for its cultural and natural appeal, in particular, the 'Pasola' (a traditional mock battle) and for its sandlewood forest.

Table III.2 shows tourism attractions by district in NTT and classifies them according to type of attraction for the years 1993–1997.

TABLE III.2 NTT TOURISM OBJECTS, 1993–1994 TO 1996–1997

	Type and number of tourism objects							
	1993–94		*1994–95*		*1995–96*		*1996–97*	
Kabupaten	*Nature*	*Culture*	*Nature*	*Culture*	*Nature*	*Culture*	*Nature*	*Culture*
Kupang	13	7	13	7	13	7	14	5
Timor Tengah Selatan	8	5	8	5	8	5	11	3
Timor Tengah Utara	2	4	2	4	2	4	6	3
Belu	11	41	11	41	11	41	8	11
Alor	5	10	5	10	5	10	8	3
Flores Timur	4	6	4	6	4	6	3	10
Sikka	5	7	5	7	5	7	10	14
Ende	7	10	7	10	7	10	36	20
Ngada	12	11	12	11	12	11	5	11
Manggarai	14	3	14	3	14	3	27	5
Sumba Timur	5	7	5	7	5	7	5	5
Sumba Barat	6	9	6	9	6	9	6	9
TOTAL	92	120	92	120	92	120	139	99

Source Department of Tourism, Post and Telecommunications NTT Regional Office pers. comm. Dec. 1997.

The Indonesian central government has identified eight priority natural tourism objects in NTT. These are :

- Lake Kelimutu (Kabupaten Ende)
- Lake Ranamase (Kabupaten Manggarai)
- Lake Moat and Lake Tondok
- Taman Buru Dataran Bena (Kabupaten Kupang)
- Pantai (beach) Waiara (Kabupaten Kupang)
- Pantai (beach) Lasiana (Kabupaten Kupang)
- Komodo National Park (Kabupaten Manggarai)
- Goa Batu Mata (forest) (Kabupaten Kupang)

(Department of Tourism, Post and Telecommunications 1998)

Lake Kelimutu was described above. Lake Ranamase is near Komodo and is popular for recreation and fishing. Lake Moat and Lake Tondok attract tourists for research, recreation, photography and camping purposes. Taman Buru Dataran Bena is a hunting ground. Pantai Waiara and Pantai Lasiana are popular beaches for recreational water activities. Komodo was described above and Goa Batu Mata is a protected forest.

Accommodation

TABLE III.3 NTT ACCOMMODATION ESTABLISHMENTS (HOTELS AND CABINS), 1993–1997

Kabupaten	*1993*	*1994*	*1995*	*1996*	*1997*
Kupang	47	53	59	62	68
Timor Tengah Selatan	5	6	6	6	6
Timor Tengah Utara	6	7	7	7	7
Belu	8	9	10	13	13
Alor	3	3	3	5	5
Flores Timur	8	8	9	11	11
Sikka	21	18	19	20	20
Ende	24	20	26	40	40
Ngada	15	18	18	23	23
Manggarai	23	28	30	34	34
Sumba Barat	5	6	6	7	9
Sumba Timur	6	6	7	7	7
TOTAL	171	182	200	235	243

Source Department of Tourism, Post and Telecommunications NTT Regional Office pers. comm. Dec. 1997.

It was estimated that in 1993 there were about 2149 hotel rooms in NTT with a total of 4478 beds (Centre for Tourism Research, Research Institiution—Bandung Institute of Technology 1995).

Passenger transport

Air transport infrastructure

Before the onset of current difficulties, there was a comprehensive air network operating throughout NTT. In addition to El Tari international airport at Kupang there are 13 smaller airports operating in the province.

TABLE III.4 NTT AIR TRANSPORT INFRASTRUCTURE

No.	*Airport and code*	*Max size aircraft*	*Infrastructure dimension (m)*			*Class*
1	El Tari (KOE)	B 737	R/W	2500 x 45	1250 x 30	I
	Kupang		T/W	202.5 x 23	123x15 190x23	
			Apron	405 x 105		
			Terminal	International	Domestic	
				1 050 m^2	2 395 m^2	
2	Waioti (MOF)	F 27	R/W	1850 x 30		III
	Maumere		T/W	95 x 20		
3	Mauhau (WGP)	F 27	R/W	1650 x 30		III
	Waingapu		T/W	105 x 18		
4	Satar Tacik (RTG)	F 27	R/W	1300 x 30		IV
	Ruteng	HS 748	T/W	120 x 18		
5	Waikabubak (TMC)	F 27	R/W	1400 x 30		IV
	Tambolaka	CN 235	T/W	135 x 23		
6	H. Hasan Aroeboesman	F 27	R/W	1350 x 30		IV
	Ende (ENE)	CN 235	T/W	15 x 30		
7	Lekunik (RTI)	NC 212	R/W	900 x 23		V
	Rote		T/W	75 x 15		
8	Sabu (SBU)	NC 212	R/W	900 x 23		V
	Tarmadu		T/W	75 x 15		
9	Bajawa (BJW)	NC 212	R/W	900 x 23		V
	Soa		T/W	75 x 15		
10	Mbai	CESSNA	R/W	900 x 30		
	Flores					
11	IPI	NC 212	R/W	1400 x 23		IV
	Ende		T/W	30 x 15		

Continued on next page

TABLE III.4 NTT AIR TRANSPORT INFRASTRUCTURE (continued)

No.	Airport and code	Max size aircraft	Infrastructure dimension (m)		Class
12	Gewayantana (LKA)	NC 212	R/W	850 x 23	IV
	Larantuka		T/W	75 x 15	
13	Atambua (ABU)	NC 212	R/W	850 x 23	V
	Heliwen		T/W	75 x 15	
14	Alor (ARD)	NC 212	R/W	800 x 23	IV
	Mali		T/W	76 x 15	
15	Komodo (LBJ)	F 27	R/W	1400 x 23	IV
	Labuan Bajo		T/W	100 x 18	
16	Lewoleba (LWB)	NC 212	R/W	900 x 23	V
	Wunopito				

Sources Directorate General Air Communications (1997a); Ministry of Communications Regional Office NTT pers. comm. Dec. 1997; Ministry of Communications Directorate of Air Transport pers. comm. Dec. 1997; Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

TABLE III.5 AIRCRAFT MOVEMENTS—NUSA TENGGARA TIMUR, 1995—DOMESTIC

No.	Airport	DC9	F100	F28	F27	Twin Otter	CASA	HS748	Other	Total
1	El Tari	198	1 123	846	1 290	1 215	1 518	753	1 868	8 811
2	Wai Oti	-	-							3 048
3	Mau Hau	-	-	-	546	-	336	838		1 720
4	Satartacik	-	-	-	-	429	638	-	-	1 067
5	Mali	-	-	-	-	534	-	-	-	534
6	Komodo	-	-	-	-	558	522	-	222	1 302
7	H.H.Aroeboesman	-	-	-	-	850	920	-	-	1 770
8	Haliwen	-	-	-	-	12	-	-	-	12
9	Tamboloka	-	-	-	-	8	523	-	-	531
10	Gewayantana	-	-	-	-	34	-	-	-	34
11	Tardamu	-	-	-	-	78	-	-	-	78
12	Lekunik	-	-	-	-	58	-	-	-	58
13	Soa	-	-	-	-	-	580	-	-	580
14	Wunopito	-	-	-	-	20	-	-	-	20

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

TABLE III.6 INTERNATIONAL AIRCRAFT MOVEMENTS—EL TARI AIRPORT, NUSA TENGGARA TIMUR, 1995

Aircraft															
F100	F28	DC9	C441	CASA	SC01 B412 Z242	E110 SK33 SK76	PA24 PA31 PA60	HR10 DASH8 C130B	E1 C C208L SA330	BE58 HS8 CDN2	BN2 VIMMY L250	C402 SB7L PN68C	BHST C172 SA332	B214T	TOTAL
4	208	2	7	4	3	4	6	7	6	4	5	4	3	1	260

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

Road transport infrastructure

TABLE III.7 ROAD LENGTH IN NTT BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

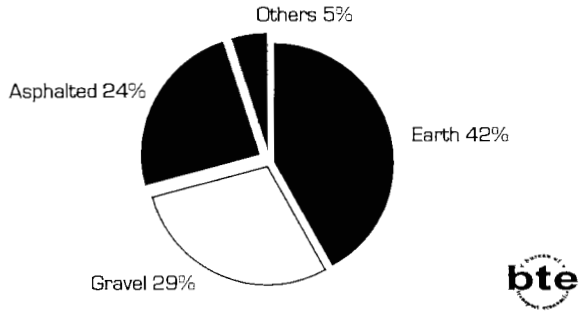
(km)

	State	Province	Regency[1]	Municipality	Total
1995					
Type of surface					
- asphalted	1 068	637	2 409	0	4 114
- gravel	75	708	3 696	0	4 479
- earth	52	501	6 075	0	6 628
- others	0	31	695	0	726
Total	1 195	1 877	12 875	0	15 947
Road condition					
- good	867	1 163	2 661	0	4 691
- moderate	274	387	2 511	0	3 172
- damaged	37	261	4 136	0	4 434
- badly damaged	17	66	3 567	0	3 650
Total	1 195	1 877	12 875	0	15 947
1996					
Type of surface					
- asphalted	867	646	2 448	0	3 961
- gravel	274	717	3 756	0	4 747
- earth	37	508	6 174	0	6 719
- others	17	31	706	0	754
Total	1 195	1 902	13 084	0	16 181
Road condition					
- good	867	1 179	2 704	0	4 750
- moderate	274	392	2 552	0	3 218
- damaged	37	264	4 203	0	4 504
- badly damaged	17	67	3 625	0	3 709
Total	1 195	1 902	13 084	0	16 181

1. Including Kupang Municipality.

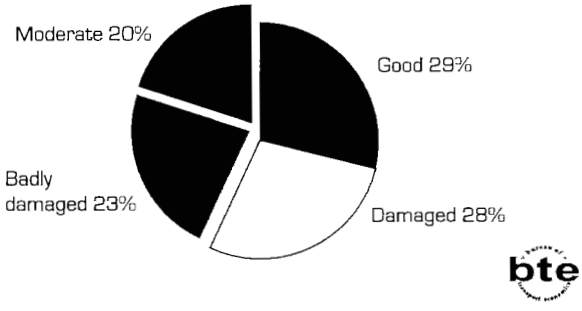
Source Central Bureau of Statistics (BPS) (1997a).

FIGURE III.1 NUSA TENGGARA TIMUR ROAD SURFACE, 1996



Source Table III.7.

FIGURE III.2 NUSA TENGGARA TIMUR ROAD CONDITION, 1996



Source Table III.7.

Ferry transport infrastructure

TABLE III.8 FERRY PORT FACILITIES—NUSA TENGGARA TIMUR

Port	*No. of berths*	*Berth area (m^2)*	*Passenger terminal area (m^2)*	*Parking area (m^2)*
Bolok	1	255	250	1 500
Labuan Bajo	1	282	500	1 500
Waibalun	1	450	282	2 000
Pantai Baru	1	196	500	6 726
Kalabahi	-	135	500	-
Aimere	-	240	-	-

Continued on next page

TABLE III.8 FERRY PORT FACILITIES—NUSA TENGGARA TIMUR (continued)

Port	No. of berths	Berth area (m^2)	Passenger terminal area (m^2)	Parking area (m^2)
Paga	1	425	-	-
Kabir	1	375	-	-
Bakalang	-	-	-	-
Maritaing	-	-	-	-
Lewoleba	-	-	-	-
Hansisi	-	-	-	-

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

Sea transport infrastructure

TABLE III.9 NUSA TENGGARA TIMUR SEAPORT FACILITIES, 1995

Seaport	Berth dimensions (m)	Capacity (ton/m^2)	Passenger terminal area (m^2)	Capacity (persons)
Tenau (Kupang)	23 x 28	3	120	-
	100 x 15	3	240	
	100 x 15	3		
	100 x 16	3		
Maumere	60 x 15	2.5	300	300
	60 x 15	2.5		
	60 x 15	2.5		
Waingapu	100 x 15	3	15 x 8.75	120
	93.75 x 8	3	6 x 20	60
Ende	100 x 8	-	420	-
	75 x 13.3	-	300	-
Kalabahi	40 x 5	1	200	-
	70 x 10			
Seba	40 x 5	-	200	-

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

TRANSPORT SERVICES

What routes exist?

Air transport

El Tari international airport in Kupang operates 13 air routes as shown in Table III.10. In addition to flights within NTT, there are flights to other major Indonesian gateways such as Denpasar, Jakarta, Surabaya and Ujung Pandang and an international route to Darwin. Other domestic routes are listed in Table III.11.

More detailed information on air routes to and from El Tari airport can be found in Table III.12 and Table III.13 along with the distance, operator, aircraft and passenger statistics. Table III.14 shows the same statistics for two of NTT's smaller airports—Mau Hau and Satartacik.

TABLE III.10 EL TARI AIRPORT KUPANG–AIR ROUTES

1	Kupang–Denpasar–Jakarta/Surabaya
2	Kupang–Waingapu–Denpasar
3	Kupang–Maumere–Denpasar
4	Kupang–Maumere–Bima
5	Kupang–Ende–Labuan Bajo
6	Kupang–Ruteng–Labuan Bajo
7	Kupang–Soa– Labuan Bajo
8	Kupang–Maumere–Ujung Pandang
9	Kupang–Tambolaka–Bima
10	Kupang–Darwin
11	Kupang–Dili
12	Kupang–Mali
13	Kupang–Larantuka
14	Kupang–Rote–Sabu

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

TABLE III.11 DOMESTIC AIR ROUTES—NUSA TENGGARA TIMUR, 1996

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
1	Kupang–Dili	MZ	F27	3
			C212	1
		SG	B737	3
2	Ruteng–Bima	MZ	C212	3
			DHT	3
3	Labuanbajo–Ende	MZ	C212	1
			DHT	3
4	Kupang–Denpasar	MZ	B737	6
			F28	7
5	Ruteng–Kupang	MZ	C212	6
			DHT	3
6	Maumere–Bima	MZ	FGA	7
7	Labuanbajo–Bima	MZ	C212	1
			DHT	3
8	Ende–Bima	MZ	C212	5
			DHT	1
9	Ende–Kupang	MZ	C212	9
			DHT	3
10	Alor–Kupang	MZ	C212	4
			DHT	2
11	Larantuka –Lewoleba	MZ	DHT	1
12	Kupang–Darwin	MZ	B737	2

MZ = Merpati
SG = Sempati

Source Directorate General Air Communications (1997a).

TABLE III.12 EL TARI AIRPORT ROUTES AND PASSENGER DEPARTURES, 1995

No.	Destination airport	Distance	Operator	Aircraft	Total passengers	Load factor
1	Denpasar	949km	Merpati	DC9	7 229	73
	Denpasar	949km	Merpati	F100	4 021	66
	Denpasar	949km	Merpati	F28	18 522	77
	Denpasar	949km	Sempati	F100	19 021	77
2	Dili	273km	Merpati	F28	4 879	47
	Dili	273km	Sempati	F100	12 625	50
3	Maumere	231km	Merpati	F27	15 208	54
	Maumere	231km	Bouraq	HS748	3 519	37
4	Waingapu	374km	Merpati	F27	3 320	45
	Waingapu	374km	Bouraq	HS748	6 768	60
	Waingapu	374km	Merpati	C212	421	54
	Waingapu	374km	Merpati	DHC6	-	-
5	Ruteng	374km	Merpati	C212	1 890	44
	Ruteng	374km	Merpati	DHC6	1 471	54
6	Ende	370km	Merpati	C212	4 238	58
	Ende	370km	Merpati	DHC6	1 794	62
7	Tambolaka	380km	Merpati	C212	240	17
	Tambolaka	380km	Merpati	DHC6	208	22
8	Alor	229km	Merpati	C212	1 152	38
	Alor	229km	Merpati	DHC6	1 165	58
9	Soa-Bajawa	372km	Merpati	C212	37	32
10	Labuan Bajo	459km	Merpati	C212	16	35
11	Sabu	-	Merpati	C212	5	11
	Sabu	-	Merpati	DHC6	71	25
12	Rote	-	Merpati	DHC6	171	22
13	Larantuka	246km	Merpati	DHC6	188	31
14	Lewoleba	234km	Merpati	DHC6	14	78

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

TABLE III.13 EL TARI AIRPORT ROUTES AND PASSENGER ARRIVALS, 1995

No.	Destination airport	Distance	Operator	Aircraft	Total passengers	Load factor
1	Denpasar	949km	Merpati	DC9	6 837	69
	Denpasar	949km	Merpati	F100	3 496	56
	Denpasar	949km	Merpati	F28	12 325	49
	Denpasar	949km	Sempati	F100	11 209	46
2	Dili	273km	Merpati	F28	1 246	12
	Dili	273km	Sempati	F100	4 338	17
3	Maumere	231km	Merpati	F27	17 021	60
	Maumere	231km	Bouraq	HS748	3 312	40
4	Waingapu	374km	Merpati	F27	2 969	41
	Waingapu	374km	Bouraq	HS748	6 842	56
	Waingapu	374km	Merpati	C212	1 302	40
	Waingapu	374km	Merpati	DHC6	14	78
5	Ruteng	374km	Merpati	C212	1 498	41
	Ruteng	374km	Merpati	DHC6	1 250	59
6	Ende	370km	Merpati	C212	3 852	57
	Ende	370km	Merpati	DHC6	1 792	63
7	Tambolaka	380km	Merpati	C212	39	28
	Tambolaka	380km	Merpati	DHC6	31	86
8	Alor	229km	Merpati	C212	1 396	46
	Alor	229km	Merpati	DHC6	1 173	59
9	Soa-Bajawa	372km	Merpati	C212	230	45
10	Labuan Bajo	459km	Merpati	C212	19	41
	Labuan Bajo	459km	Merpati	DHC6	70	26
11	Sabu	-	Merpati	C212	2	4
	Sabu	-	Merpati	DHC6	329	55
12	Rote	-	Merpati	DHC6	47	52
13	Larantuka	246km	Merpati	DHC6	15	14
14	Lewoleba	234km	Merpati	DHC6	98	20
15	Bima	468km	Merpati	C212	139	30
	Bima	468km	Merpati	DHC6	18	20

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

TABLE III.14 MAU HAU AND SATARTACIK AIRPORT ROUTES AND PASSENGER DEPARTURES, 1995

No.	Destination airport	Journey time	Operator	Aircraft	Total passengers	Load factor
Mau Hau						
1	El Tari Kupang	1.00	Merpati	F27	1 738	49.57
2	El Tari Kupang	1.00	Bouraq	HS748	4 899	71.15
3	El Tari Kupang	1.20	Merpati	C212	787	40.05
4	Bima/Denpasar	1.00	Merpati	F27	1 673	45.89
5	Denpasar	1.40	Bouraq	HS748	4 929	74.28
6	Tambolaka	0.30	Merpati	C212	65	34.54
Satartacik						
1	Bima	0.50	Merpati	C212	1 926	52.00
		0.50	Merpati	DHC6	497	58.00
2	El Tari Kupang	1.30	Merpati	C212	1 546	42.00
		1.30	Merpati	DHC6	990	51.00
3	Komodo L. Bajo	0.20	Merpati	C212	28	42.00
		0.20	Merpati	DHC6	769	46.00
4	Ende	0.30	Merpati	C212	52	47.00
		0.30	Merpati	DHC6	46	38.00

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

Ferry transport

There are 12 major ferry routes in NTT listed in Table III.15. The table shows that Kupang is not only the major air hub of the province but also the water transport hub.

Sea transport

There are 14 sea ports in NTT which are used by passenger ships. These are listed in Table III.16.

Pelni is the major government-owned passenger ship operator in Indonesia. Appendix 1 lists all Pelni routes for 1997. Six of the 20 Pelni routes listed visit an NTT port. These ports are Kupang, Larantuka, Labuan Bajo, Waingapu, Ende, Kalabahi, Maumere, Sabu and Rote.

In addition to Pelni the government has also identified a list of Perintis routes which may be operated by both government and private operators (including so- called fast-ships/ferries). Perintis routes to and within NTT for the Lebaran season (end-of-Ramadan) are listed in Table III.17.

TABLE III.15 NUSA TENGGARA TIMUR FERRY ROUTES

Kupang–Larantuka
Kupang–Pantai Baru
Kupang–Sabu
Kupang–Kalabahi
Larantuka–Waiwerang–Lewoleba
L.Bajo–Komodo–Sape
Kupang–Ende
Kalabahi–Atapupu
Kalabahi–Baranusa–Balauring
Waingapu–Ende
Kupang–Naikliu
Waingapu–Sabu

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section [1996].

TABLE III.16 NUSA TENGGARA TIMUR SEAPORTS

Kupang	Reo
Maumere	Waikelo
Waingapu	Ba'a
Ende	Labuan Bajo
Kalabahi	Seba
Atapupu	Marapokot
Larantuka	Baranusa

TABLE III.17 NTT PERINTIS ROUTES, 1997

Benoa (Bali)–Lembar–Badas–Bima–Komodo
Benoa (Bali)–Maumere
Ende–Sabu–Waingapu–Kupang–Waikelo–Labuan Bajo
Kupang–Maumere
Kupang–Mamuju

Source Ministry of Communications pers. comm. Dec. 1997.

Frequency and travel time

Air

The travel times for air routes departing from Mau Hau and Satartacik airports are displayed in Table III.14. Table III.18 shows routes and frequencies between other major centres.

TABLE III.18 NTT AIR ROUTES AND FREQUENCIES

Route	*Travel time*	*Frequency*	*Aircraft*
Darwin–Kupang		2 flights / week	
Kupang–Waingapu (East Sumba)		daily	
Kupang–Ende	1 hour	daily	C212
Kupang–Ruteng		3 flights / week	C212
Kupang–Ba'a (Rote Island)		1 flight / week	C212
Kupang–Maumere	30 minutes	daily	

Source BTE field notes December 1997.

Ferry

TABLE III.19 NTT FERRY ROUTES AND FREQUENCIES

Route	*Travel time*	*Frequency*
Kupang–Ende/Aimere	12 hours	2 trips per week
Ende/Aimere–Waingapu	6 hours	2 trips per week
Kupang–Sabu	12 hours	1 trip per week
Sabu–Waingapu	8 hours	1 trip per week
Labuan Bajo–Komodo	4 hours	
Komodo–Sade (Sumbawa)	4 hours	
Kupang–Ba'a (Rote Island)		daily

Source BTE field notes December 1997.

Sea

The frequency of Pelni routes is shown in Appendix 1. All routes have a 14-day round voyage.

Road

TABLE III.20 NTT ROAD ROUTES AND FREQUENCIES

Route	*Travel time*
Ende–Kelimutu	2 hrs
Ende–Ruteng	6 hrs
Ruteng –Labuan Bajo	4 hrs
Ruteng–Ranamase	1 hr (27km)
Kupang–Soe	2 hrs 30 mins (111km)
Soe–Taman Buru Dataran Bena	1 hr 15 mins (57km)
Maumere–Waiara	10 mins (12km)
Kupang–Bau Mata	18km
El Tari airport–Bau Mata	5km
Kupang–Panite	1 hr 30 mins (102km)
Mbago–Amurang	12km

Source BTE field notes December 1997.

CURRENT AND HISTORIC DEMAND

Passenger transport

Air transport

TABLE III.21 EL TARI AIRPORT TRAFFIC STATISTICS, 1991–1997

	Number of flights		*Passengers*			
	Arrivals	*Departures*	*Arrivals*	*Departures*	*Transit*	*Total passengers*
TOTAL-91	4 166	4 168	82 443	76 090	32 397	190 930
TOTAL-92	4 103	4 110	85 410	79 769	20 437	185 616
TOTAL-93	4 065	4 064	82 120	85 261	18 542	185 923
TOTAL-94	3 941	3 956	88 759	87 625	27 059	203 443
Jan-95	282	283	7 304	7 567	2 157	
Feb-95	277	281	6 697	6 741	1 601	
Mar-95	336	330	7 817	7 863	1 052	
Apr-95	345	350	6 940	7 374	1 052	
May-95	345	351	6 920	7 265	844	
Jun-95	285	279	8 164	9 434	1 240	
Jul-95	349	350	11 079	10 447	1 254	

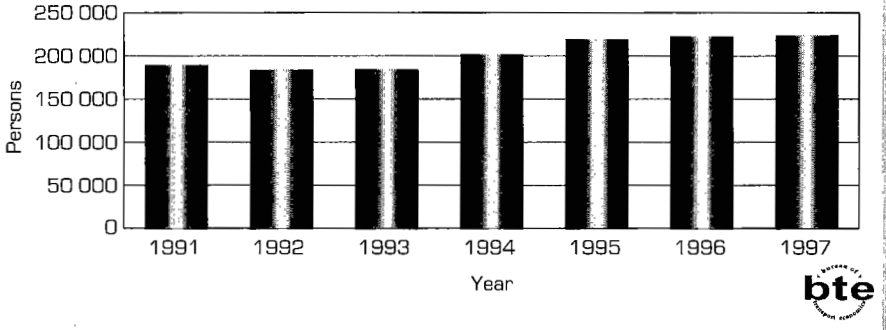
Continued on next page

TABLE III.21 EL TARI AIRPORT TRAFFIC STATISTICS, 1991-1997 (continued)

	Number of flights		*Passengers*			*Total*
	Arrivals	*Departures*	*Arrivals*	*Departures*	*Transit*	*passengers*
Aug-95	377	378	8 182	8 484	1 090	
Sep-95	509	504	9 662	9 584	1 323	
Oct-95	335	332	9 183	9 561	1 007	
Nov-95	496	492	12 947	9 036	921	
Dec-95	349	348	8 981	8 889	965	
TOTAL-95	4 285	4 278	103 876	102 245	14 506	220 627
Jan-96	253	351	8 351	8 679	1 101	
Feb-96	318	319	7 264	7 768	933	
Mar-96	352	350	9 921	9 370	1 307	
Apr-96	366	369	7 408	7 736	837	
May-96	398	401	7 973	7 819	931	
Jun-96	370	371	8 787	9 953	1 076	
Jul-96	367	367	10 933	9 927	954	
Aug-96	372	372	9 233	9 138	995	
Sep-96	353	354	9 183	9 213	945	
Oct-96	374	375	9 358	9 587	1 090	
Nov-96	332	333	8 459	8 462	1 052	
Dec-96	367	364	8 673	8 303	1 177	
TOTAL-96	4 222	4 326	105 543	105 955	12 398	223 896
Jan-97	353	354	9 002	8 894	962	
Feb-97	277	276	7 822	7 841	1 094	
Mar-97	324	326	9 353	8 679	1 014	
Apr-97	348	348	8 324	8 130	1 026	
May-97	353	354	7 388	6 571	779	
Jun-97	388	371	9 628	10 824	1 147	
Jul-97	334	334	11 974	11 554	1 417	
Aug-97	325	333	9 944	9 984	1 426	
Sep-97	302	300	8 178	7 905	253	
Oct-97	292	293	8 262	8 167	99	
TOTAL-97	3 296	3 289	89 875	88 549	9 217	187 641

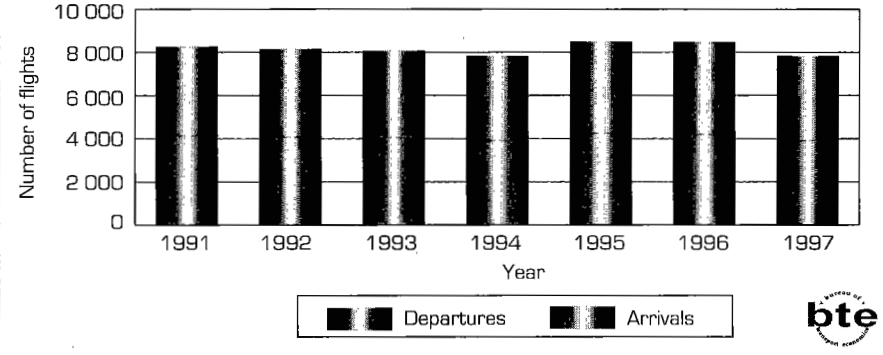
Source Ministry of Communications Regional Office NTT pers. comm. Dec. 1997; Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

FIGURE III.3 EL TARI AIRPORT TOTAL PASSENGERS, 1991–1997



Source Table III.21.

FIGURE III.4 EL TARI AIRPORT NUMBER OF FLIGHTS, 1991–1997



Source Table III.21.

TABLE III.22 EL TARI : KUPANG–DARWIN TRAFFIC STATISTICS, 1991–1997

	Number of flights		*Passengers*			*Total*
	Arrivals	*Departures*	*Arrivals*	*Departures*	*Transit*	*passengers*
TOTAL-91	104	104	6 817	5 008	0	11 825
TOTAL-92	105	105	5 966	4 459	0	10 425
TOTAL-93	104	104	5 384	4 662	0	10 046
TOTAL-94	115	120	5 389	4 551	0	9 940
Jan-95	8	8	384	436	0	
Feb-95	8	8	286	270	0	
Mar-95	9	9	304	293	0	

Continued on next page

TABLE III.22 EL TARI : KUPANG–DARWIN TRAFFIC STATISTICS, 1991–1997 (continued)

	Number of flights		*Passengers*			*Total*
	Arrivals	*Departures*	*Arrivals*	*Departures*	*Transit*	*passengers*
Apr-95	9	9	525	451	0	
May-95	9	9	500	300	0	
Jun-95	10	10	575	535	0	
Jul-95	10	10	667	844	0	
Aug-95	9	9	440	414	0	
Sep-95	9	9	603	441	0	
Oct-95	7	7	302	448	0	
Nov-95	9	9	507	329	0	
Dec-95	9	9	482	356	0	
TOTAL-95	106	106	5 575	5 117	0	10 692
Jan-96	9	9	362	417	0	
Feb-96	7	7	272	267	0	
Mar-96	9	9	400	238	0	
Apr-96	8	8	374	309	0	
May-96	8	8	344	291	0	
Jun-96	10	10	591	508	0	
Jul-96	10	10	666	553	0	
Aug-96	9	9	629	407	0	
Sep-96	8	8	598	506	0	
Oct-96	9	9	514	566	0	
Nov-96	8	8	368	360	0	
Dec-96	7	8	452	312	0	
TOTAL-96	102	103	5 570	4 734	0	10 304
Jan-97	9	9	401	611	0	
Feb-97	8	12	340	284	0	
Mar-97	8	8	366	281	0	
Apr-97	10	9	483	378	0	
May-97	11	9	390	334	0	
Jun-97	16	12	758	669	0	
Jul-97	10	9	671	623	0	
Aug-97	12	9	553	486	0	
Sep-97	8	9	577	627	0	
Oct-97	9	9	656	635	0	
TOTAL-97	101	95	5 195	4 928	0	10 123

Source Ministry of Communications Regional Office NTT pers comm. Dec. 1997; Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

TABLE III.23 NTT AIRPORT TRAFFIC STATISTICS, 1991–1995

	1991	*1992*	*1993*	*1994*	*1995*
WAI OTI AIRPORT					
Number of flights					
Arrivals	1 534	1 664	1 458	1 427	1 524
Departures	1 534	1 664	1 788	1 427	1 524
Passengers					
Arrivals	22 000	21 815	24 321	27 638	32 723
Departures	22 792	21 686	25 917	29 492	31 992
Transit	14 123	10 490	10 424	12 989	11 652
Total	58 915	53 991	60 662	70 119	76 367
MAU HAU AIRPORT					
Number of flights					
Arrivals	980	939	845	890	860
Departures	980	939	845	890	860
Passengers					
Arrivals	11 459	12 334	12 425	13 743	15 409
Departures	11 760	12 494	13 238	14 234	16 608
Transit	9 872	6 525	5 446	6 911	9 087
Total	33 091	31 353	31 109	34 888	41 104
SATARTACIK AIRPORT					
Number of flights					
Arrivals	587	612	568	582	533
Departures	587	612	568	582	534
Passengers					
Arrivals	5 066	5 717	8 825	5 116	3 787
Departures	5 457	5 873	5 388	5 676	4 555
Transit	431	639	319	291	621
Total	10 954	12 229	14 532	11 083	8 963
MALI AIRPORT					
Number of flights					
Arrivals	262	298	224	242	267
Departures	262	298	224	242	267
Passengers					
Arrivals	2 950	3 036	2 344	2 534	2 656
Departures	3 115	2 895	2 235	2 542	2 515
Transit	0	0	0	0	0
Total	6 065	5 931	4 579	5 076	5 171

Continued on next page

TABLE III.23 NTT AIRPORT TRAFFIC STATISTICS, 1991–1995 (continued)

	1991	*1992*	*1993*	*1994*	*1995*
KOMODO AIRPORT					
Number of flights					
Arrivals	629	580	544	553	651
Departures	629	580	546	553	651
Passengers					
Arrivals	2 545	2 435	1 758	2 365	3 243
Departures	3 257	3 670	2 357	3 004	4 325
Transit	2 895	2 893	2 928	3 053	3 467
Total	8 697	8 998	7 043	8 422	11 035
H.H. AROEBOESMAN					
Number of flights					
Arrivals	1 122	1 141	971	927	885
Departures	1 122	1 141	971	927	885
Passengers					
Arrivals		7 332	7 320	6 992	6 107
Departures		8 616	7 718	7 671	7 115
Transit		1 990	1 800	2 271	2 320
Total	19 751	17 938	16 838	16 934	15 542
HALIWEN AIRPORT					
Number of flights					
Arrivals	17	21	6	2	6
Departures	17	21	6	2	6
Passengers					
Arrivals	37	74	9	2	21
Departures	40	55	14	2	45
Transit	19	117	0	0	27
Total	96	246	23	4	93
TAMBOLAKA AIRPORT					
Number of flights					
Arrivals	274	301	265	311	265
Departures	274	301	265	311	266
Passengers					
Arrivals	1 376	1 440	1 499	1 992	1 659
Departures	1 768	1 850	1 999	2 554	1 983
Transit	757	851	348	576	486
Total	3 901	4 141	3 846	5 122	4 128

Continued on next page

TABLE III.23 NTT AIRPORT TRAFFIC STATISTICS, 1991–1995 (continued)

	1991	1992	1993	1994	1995
GEWAYANTANA AIRPORT					
Number of flights					
Arrivals	49	44	12	40	17
Departures	49	44	12	40	17
Passengers					
Arrivals	236	176	75	164	76
Departures	141	166	32	109	61
Transit	75	41	0	45	16
Total	452	383	107	318	153
TARDAMU AIRPORT					
Number of flights					
Arrivals	84	79	10	33	39
Departures	84	79	10	32	39
Passengers					
Arrivals	760	625	31	137	346
Departures	739	596	111	303	461
Transit	0	0	0	0	8
Total	1 499	1 221	142	440	815
LEKUNIK AIRPORT					
Number of flights					
Arrivals	69	28	2	21	29
Departures	69	28	2	21	29
Passengers					
Arrivals	375	128	10	43	66
Departures	364	124	10	76	89
Transit	0	0	0	60	54
Total	739	252	20	179	209
SOA AIRPORT					
Number of flights					
Arrivals	210	220	172	246	290
Departures	210	220	172	246	290
Passengers					
Arrivals	863	951	900	1 467	911
Departures	896	1 005	1 017	1 627	804
Transit	1 267	1 005	759	940	947
Total	3 026	2 961	2 676	4 034	2 662

Continued on next page

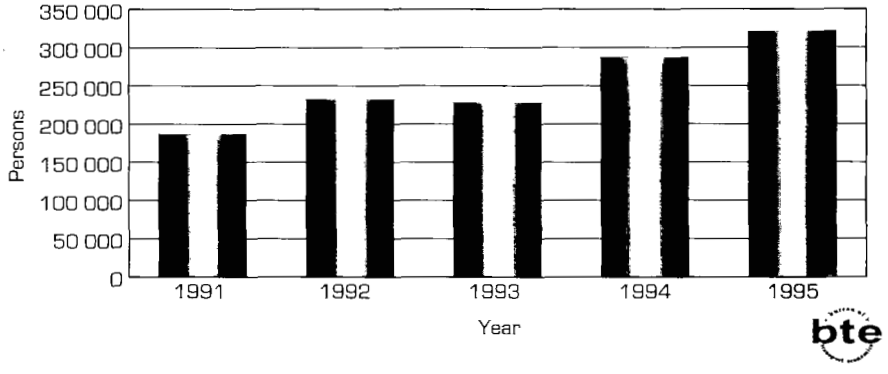
TABLE III.23 NTT AIRPORT TRAFFIC STATISTICS, 1991–1995 (continued)

	1991	*1992*	*1993*	*1994*	*1995*
WUNOPITO AIRPORT					
Number of flights					
Arrivals	47	28	2	29	10
Departures	47	28	2	29	10
Passengers					
Arrivals	135	91	14	69	33
Departures	111	68		60	23
Transit	98	43		55	12
Total	344	202	14	184	68

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

Ferry transport

FIGURE III.5 NUSA TENGGARA TIMUR TOTAL FERRY PASSENGERS, 1991–1995



Source Table III.24.

TABLE III.24 TOTAL FERRY SERVICES—NUSA TENGGARA TIMUR

Ferry route	Total ship calls					Total passengers				
	1991	*1992*	*1993*	*1994*	*1995*	*1991*	*1992*	*1993*	*1994*	*1995*
Kupang–Larantuka	182	104	114	212	208	39 395	45 881	45 614	49 683	52 623
Kupang–Pantai Baru	25	288	345	710	641	70 426	82 507	85 344	86 464	103 433
Kupang–Sabu	60	63	95	187	165	13 029	17 869	25 120	24 587	25 281
Kupang–Kalabahi	78	75	89	189	192	13 233	20 859	21 839	19 270	22 795
Larantuka–Waiwerang–Lewoleba	50	44	88	348	256	7 204	5 313	4 376	13 809	5 621
L Bajo–Komodo–Sape	468	435	516	476	500	29 834	32 236	15 988	48 635	46 294
Kupang–Ende	30	59	53	106	117	14 013	27 292	29 267	29 938	33 372
Kalabahi–Atapupu	-	-	-	51	96	a	a	a	2 183	4 325
Kalabahi–Baranusa–Balauring	-	-	-	161	155	a	a	a	4 748	3 925
Waingapu–Ende	-	-	-	33	119	b	b	b	5 634	18 412
Kupang–Naikliu	-	9	30	0	0	-	734	775	c	c
Waingapu–Sabu	-	-	-	32	111	b	b	b	2 313	4 855
TOTAL	893	1 077	1 330	2 505	2 560	187 134	232 691	228 323	287 264	320 936

a. Did not begin operation until Aug 1994.
b. Did not begin operation until Sept 1994.
c. Service did not operate.

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

Sea transport

TABLE III.25 NUSA TENGGARA TIMUR PORT TRAFFIC STATISTICS, 1991–1993

Port	*Ship calls*	*GRT*	*Passengers*
1991			
Kupang	1 591	635 563	59 343
Maumere	591	164 643	11 045
Waingapu	467	342 006	36 826
Ende	448	311 710	54 165
Kalabahi	2 216	331 363	68 766
Atapupu	296	295 681	1 797
Larantuka	3 351	431 784	193 063
Reo	364	379 489	1 660
Waikelo	160	5 163	75
Ba'a/Seba	379	35 380	18 216
TOTAL	9 863	2 932 782	444 956
1992			
Kupang	1 300	899 560	53 053
Maumere	613	174 944	21 795
Waingapu	581	455 056	55 166
Ende	453	304 635	59 165
Kalabahi	2 525	337 322	51 738
Atapupu	301	296 114	2 105
Larantuka	3 115	416 689	189 823
Reo	299	187 765	1 472
Waikelo	182	5 046	144
Ba'a/Seba	398	35 144	18 754
TOTAL	9 767	3 112 275	453 215
1993			
Kupang	1 401	939 131	53 426
Maumere	621	459 919	42 590
Waingapu	867	444 680	45 679
Ende	701	908 267	64 165
Kalabahi	1 422	480 071	30 887
Atapupu	326	90 806	4 506
Larantuka	2 556	445 672	372 269
Reo	260	340 214	1 645
Waikelo	250	25 211	847
Ba'a	602	161 959	73 171
Labuan Bajo	545	98 594	3 640
Seba	298	252 172	65 032
Marapokot	42	43 206	558
Baranusa	-	-	-
TOTAL	9 891	4 689 902	758 415

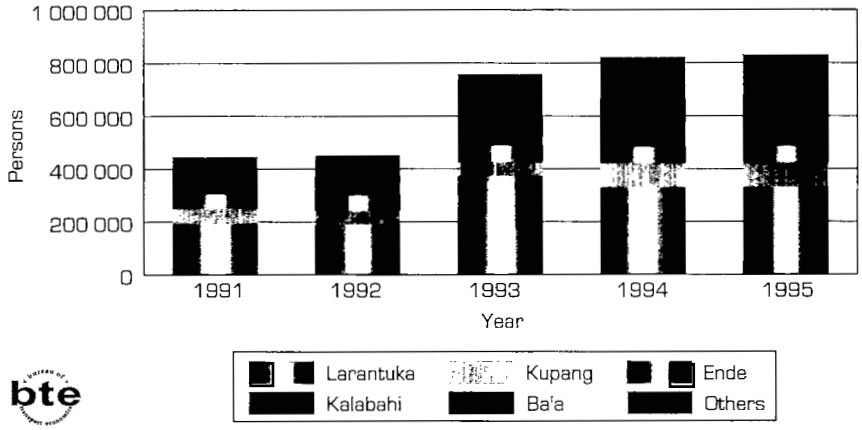
Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

TABLE III.26 NUSA TENGGARA TIMUR PORT TRAFFIC STATISTICS, 1994–1995

Port	Ship calls	GRT	Passengers		
			Disembark	Embark	Total
1994					
Kupang	1 601	1 794 636	44 271	48 345	92 616
Maumere	1 330	1 319 987	18 632	28 324	46 956
Waingapu	896	401 213	27 026	25 811	52 837
Ende	727	560 071	33 364	28 289	61 653
Kalabahi	1 707	532 743	48 333	48 197	96 530
Atapupu	395	150 226	2 489	2 288	4 777
Larantuka	2 739	398 115	184 946	144 541	329 487
Reo	390	345 665	875	910	1 785
Waikelo	290	29 938	214	430	644
Ba'a	840	157 851	50 534	36 311	86 845
Labuan Bajo	565	56 771	4 375	5 116	9 491
Seba	258	190 604	16 525	12 493	29 018
Marapokot	56	44 607	554	136	690
Baranusa	403	54 323	4 555	4 440	8 995
TOTAL	11 794	6 036 750	436 693	385 631	822 324
1995					
Kupang	1 612	1 794 799	45 101	49 115	94 216
Maumere	1 335	1 320 669	20 113	29 551	49 664
Waingapu	906	406 112	27 564	26 512	54 076
Ende	735	561 910	33 647	28 413	62 060
Kalabahi	2 120	533 941	49 231	48 661	97 892
Atapupu	403	167 853	2 715	2 269	4 984
Larantuka	2 644	400 516	185 060	145 375	330 435
Reo	401	343 175	960	897	1 857
Waikelo	293	30 989	269	455	724
Ba'a	656	158 653	50 811	35 998	86 809
Labuan Bajo	569	59 824	4 796	5 119	9 915
Seba	321	110 556	15 676	12 877	28 553
Marapokot	58	40 919	576	144	720
Baranusa	205	55 762	4 575	4 473	9 048
TOTAL	12 258	5 985 678	441 094	389 859	830 953

Source Ministry of Communications Nusa Tenggara Timur Regional Office Planning and Program Section (1996).

FIGURE III.6 NUSA TENGGARA TIMUR TOP FIVE SEAPORTS AND TOTAL PASSENGERS

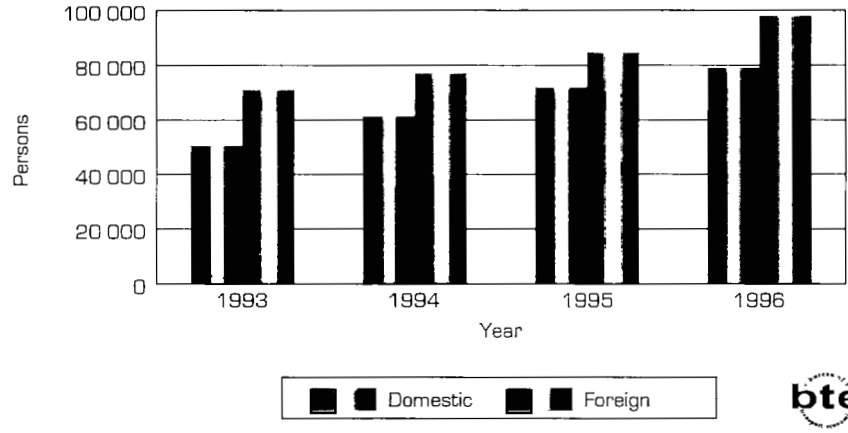


Source See Table III.25 and Table III.26.

Tourism demand

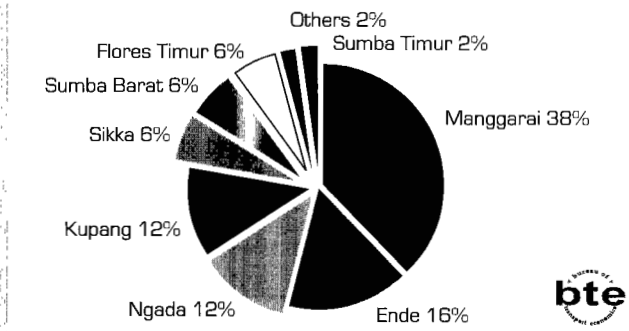
International and domestic

FIGURE III.7 NUSA TENGGARA TIMUR TOTAL TOURISTS, 1993–1996



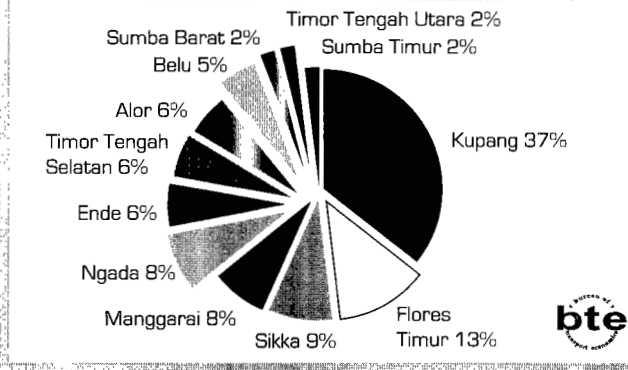
Source Table III.27.

FIGURE III.8 DESTINATION OF FOREIGN TOURISTS, 1996



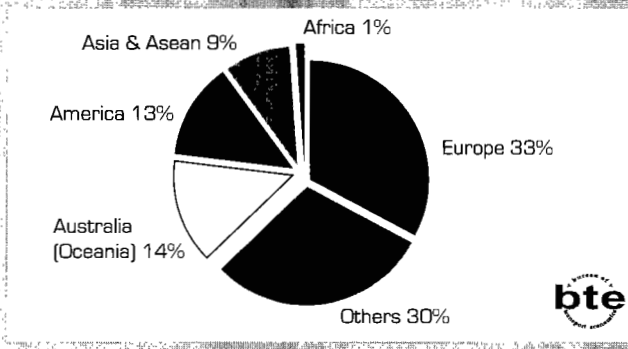
Source Table III.27.

FIGURE III.9 DESTINATION OF DOMESTIC TOURISTS, 1996



Source Table III.27.

FIGURE III.10 ORIGIN OF FOREIGN TOURISTS, 1995



Source Ministry of Communications Nusa Tenggara Timur Regional Office (1996).

TABLE III.27 TOURISM DEVELOPMENT IN NUSA TENGGARA TIMUR, 1993-1996

	Tourists from foreign countries				*Domestic tourists*			
Kabupaten	*1993*	*1994*	*1995*	*1996*	*1993*	*1994*	*1995*	*1996*
Kupang	7 743	8 674	9 400	9 672	20 916	24 375	32 648	36 478
Timor Tengah Selatan	1 269	824	879	804	4 621	4 924	5 170	5 928
Timor Tengah Utara	971	214	287	173	1 124	1 326	1 590	1 931
Belu	240	227	291	147	7 071	7 710	4 381	4 620
Alor	768	529	718	457	1 063	1 629	1 994	1 880
Flores Timur	2 847	3 112	4 383	4 826	6 972	7 112	7 163	12 496
Sikka	3 245	3 467	3 956	4 880	7 126	7 476	7 562	8 526
Ende	8 865	11 986	14 031	12 543	6 825	6 179	6 266	6 183
Ngada	1 810	5 101	6 170	9 417	4 968	5 163	5 283	7 425
Manggarai	17 678	23 009	26 034	30 380	7 125	7 682	7 760	8 120
Sumba Timur	2 145	1 126	1 395	1 325	1 676	1 812	2 043	2 168
Sumba Barat	2 924	3 078	4 335	4 347	1 472	1 642	2 742	2 103
TOTAL	50 505	61 347	71 879	78 971	70 959	77 030	84 602	97 858

Source Department of Tourism, Post and Telecommunications NTT Regional Office pers. comm. Dec. 1997.

FUTURE TOURISM DEMAND

The master plan of tourism has not yet been completed for NTT. There are no current forecasts available of future tourism demand, although the expectation appears to be continued high growth rates of approximately 17 per cent per annum.

PLANNED DEVELOPMENTS

As the master plan of tourism has not yet been completed for NTT, tourism and transport planning are not yet integrated. This will occur when the plan is completed, according to Department of Tourism officials.

A report for a governmental cabinet meeting by the Department of Tourism, Post and Telecommunications in September 1997 noted that negotiations with potential investors were under way for developing Kupang as a tourist region for Australian tourists (Department of Tourism, Post and Telecommunications 1997).

Tourism

A starred hotel development is under construction in Sumba. It is a 'Club Med' style of tourist resort.

Transport

The passenger terminal at El Tari is being extended to cope better with peak morning passenger flows, but there are no further plans to extend El Tari airport in the current Repelita.

Planned ferry routes (and their distance, where known) include: Aimere–Waingapu (60km); Waikelo–Sape (66km); Labuan Bajo–Waikelo (70km); Maritaing–Dilli (33km); Kupang–Darwin; Waingapu–Sape (125km); Kupang–Hansisi (18km).

DEVELOPMENT ISSUES / PROBLEMS

- The manager of the provincial Department of Tourism identified two main problems for the future in NTT:
  - transport infrastructure, especially roads; and
  - the high-cost economy.
- Airport officials also pointed out that there are no taxis available, only public transportation, and this may inhibit tourism development.

APPENDIX IV

SULAWESI SELATAN

INTRODUCTION

Geography

The island of Sulawesi contains four provinces: Sulawesi Selatan, Sulawesi Tengah, Sulawesi Tenggara, and Sulawesi Utara. It is located between Kalimantan to its west, Maluku to its east and Nusa Tenggara to its south. The province of Sulawesi Selatan borders Sulawesi Tengah to its north; to the east are Bone Bay and Sulawesi Tenggara; to the south is the Flores Sea; and to the west is the Makassar Strait. This province also includes hundreds of islands in the Flores Sea, Makassar Strait and Bone Bay. The area of Sulawesi Selatan is 62 483 square kilometres.

The province consists of two municipalities: Ujung Pandang and Pare-Pare. Ujung Pandang is the capital. There are 21 regencies in the province: Selayar, Bulukumba, Bantaeng, Jeneponto, Takalar, Gowa, Sinjai, Maros, Pankajene Kepulauan (Pangkep), Barru, Bone, Soppeng, Wajo, Sidenreng Rappang (Sidrap), Pinrang, Enrekang, Luwu, Tana Toraja (Tator), Polewali Mamasa (Polmas), Majene and Mamuju.

The province lies in the middle of the Indonesian archipelago. This strategic position places Sulawesi Selatan as a possible centre of trading and transport activities in eastern Indonesia.

Key development areas

The government has defined six key development areas of the province:

1. Ujung Pandang (Ujung Pandang Municipality and its surroundings);
2. Pare-Pare (Pare-Pare Municipality and its surroundings);
3. Bone (Bone Regency and its surroundings);
4. Luwu (Bone Regency and its surroundings) a development area for tourism;

5. Mamuju (Mamuju Regency and its surroundings);
6. Bulukumba (Bulukumba Regency and its surroundings) a development area for plantation, crops, fishery and tourism.

Within these six primary areas, five priority areas have also been defined:

1. Polmas Regency, a priority for plantation development;
2. Tana Toraja Regency, a priority for tourism development;
3. Wajo Regency, a priority for crops (paddy) development;
4. Gowa Regency, a priority for horticulture and tourism; and
5. Pakep Regency, a priority for fishery development.

Population

The population of Sulawesi Selatan in 1995 was 7 558 492 million. Based on the population census of 1990, the growth rate of the population between 1980 and 1990 was 1.42 per cent per annum. The population density per square kilometre was 104 persons in 1995. The population of Sulawesi Selatan comprises four main ethnic groups: Bugis, Makassar, Toraja and Mandar (Central Bureau of Statistics (BPS), 1998).

Economy

TABLE IV.1 GRDP OF SULAWESI SELATAN PROVINCE
(million rupiahs)[a]

No.	Sectors	Year			
		1993	*1994*	*1995*	*1996*
1	Agriculture	2 865 649	3 002 814	3 241 399	3 448 387
2	Mining and quarrying	239 882	274 653	302 292	338 524
3	Manufacturing industries	873 227	963 182	1 040 763	1 128 290
4	Electricity, gas and water supply	73 044	87 044	89 403	108 823
5	Construction	433 502	469 589	504 985	553 488
6	Trade, restaurant and hotel	1 216 104	1 300 053	1 406 471	1 515 202
7	Transport and communication	432 742	492 404	560 212	631 705
8	Finance, rent of building and business services	462 234	510 967	535 739	605 545
9	Service	915 389	987 441	1 063 653	1 135 302
Total		7 511 773	8 088 147	8 744 917	9 465 266

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TOURISM INFRASTRUCTURE

Tourist attractions

Where are they? What type?

Sulawesi Selatan has a great variety of tourist attractions (see Table IV.2 and Table IV.3). The most popular attraction for international tourists is Tana Toraja with its unique culture and burial ceremonies. Tana Toraja is about 350 kilometres away from Ujung Pandang, and can be reached by plane or car. Other popular natural attractions are Tanjung Bira in Bulukumba and Takabonerate National Sea Park in Selayar.

Three primary tourism development areas have been identified:

1. Ujung Pandang and its surroundings;
2. Tana Toraja and its surroundings; and
3. Bulukumba and its surroundings, including Selayar.

TABLE IV.2 SULAWESI SELATAN HISTORICAL, CULTURAL AND ARCHAEOLOGICAL TOURIST ATTRACTIONS

No.	*Object*	*Location*	*Attractions/ Activities*
1	Fort Rotterdam	Ujung Pandang	Historical remains
2	Grave of Diponegoro	Ujung Pandang	Grave site
3	Grave of Sultan Hasanuddin	Gowa	Grave site
4	Old grave of King Lamare/Bone	Bone	Grave site
5	Tantoni	Tana Toraja	Grave site
6	Lemo	Lemo-Tana Toraja	Grave site
7	Londa	Tana Toraja	Grave site
8	Old grave of King Talo	Ujung Pandang	Grave site
9	Bola Soba	Watampone	Historical building
10	Suaya	Makale	Grave site
11	Sunggu Minasa	Sunggu Minasa Gowa	Old palace
12	Ancient park in Leang-Leang	Maros	Historical remains
13	Ancient park in Batu Pake	Sinjai	Research archaeology

Source Department of Tourism, Post and Telecommunications (1995).

TABLE IV.3 SULAWESI SELATAN MARINE TOURIST ATTRACTIONS

No.	*Location*	*Attraction/activities*	*Description*
1	Samalona Island	Diving, boat tour	9 miles from Ujung Pandang
2	Selayar Island	Diving, underwater photography	South-east of Ujung Pandang
3	Kodingaren Island	Diving, boat tour	30 minutes from Samalona
4	Lumu-Lumu Island	Diving, sailing	60 minutes from Samalona
5	Kapoposang Island	Diving	2.5 hours from Samalona
6	Takabonerate Island	Diving, sailing	South of Selayar Island
7	Bina Ria Beach	Swimming, boat recreation	66 km from Ujung Pandang
8	Bira Cape	Swimming, boat	45 km from Bulukumba, 194 km from Ujung Pandang
9	Lumpue Beach	Swimming, boat	Pare-Pare
10	Kayangan Island	Swimming, boat, fishing	4 miles from Ujung Pandang
11	Lae-Lae Island	Boat, fishing, recreation	2 miles from Ujung Pandang
12	Tempe Lake	Fishing, swimming, boat	
13	Matano & Towoti lakes	Fishing, swimming, boat	
14	Sa'dang river	Rafting, tracking	

Source Department of Tourism, Post and Telecommunications (1995).

Accommodation

Ujung Pandang and Tana Toraja have relatively good accommodation facilities for tourists. Starred and non-starred hotels, cottages and inns are all available. In Bulukumba and Selayar facilities are not so well developed.

Passenger transport

Air transport infrastructure

The international airport of Hasanuddin in Ujung Pandang is the major gateway for eastern Indonesia. Pongtiku in Tana Toraja is another important airport in facilitating tourists coming to the province.

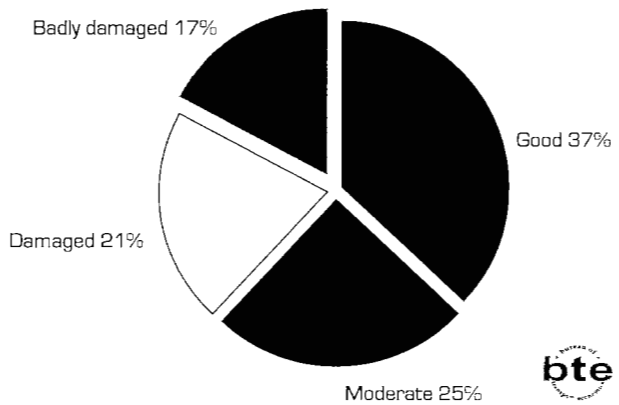
TABLE IV.4 SULAWESI SELATAN AIRPORT INFRASTRUCTURE

Airport	*Location*	*Runway (metres)*	*Capacity (A/c type)*	*Terminal (m^2)*
Hasanuddin	Ujung Pandang	2 500 x 45	DC10	5 400
Pongtiku	Tana Toraja	900 x 23	DHC6	228
Tampa Padang	Mamuju	850 x 23	C212	100
Andi Jemma	Masamba	850 x 23	C212	100

Source Ministry of Communications (1997).

Road transport infrastructure

FIGURE IV.1 SULAWESI SELATAN ROAD CONDITION, 1996



Source Table IV.5.

TABLE IV.5 ROAD LENGTH BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

(km)

	State	*Province*	*Regency*	*Municipality*	*Total*
1995					
Type of surface					
- asphalted	1 279	1 718	6 155	982	10 134
- gravel	110	101	5 060	75	5 346
- earth	292	0	8 915	147	9 354
- others	0	0	2 313	116	2 429
Total	1 681	1 819	22 443	1 320	27 263
Road condition					
- good	1 334	1 147	6 416	979	9 876
- moderate	347	407	5 921	203	6 878
- damaged	0	265	5 470	108	5 843
- badly damaged	0	0	4 636	30	4 666
Total	1 681	1 819	22 443	1 320	27 263
1996					
Type of surface					
- asphalted	1 334	1 779	6 263	1 020	10 396
- gravel	347	105	5148	78	5 678
- earth	0	0	9 071	153	9 224
- others	0	0	2 354	120	2 474
Total	1 681	1 884	22 836	1 371	27 772
Road condition					
- good	1 334	1 188	6 528	1 017	10 067
- moderate	347	422	6 025	211	7 005
- damaged	0	274	5 566	112	5 952
- badly damaged	0	0	4 717	31	4 748
Total	1 681	1 884	22 836	1 371	27 772

Source Central Bureau of Statistics (1997a).

Ferry transport infrastructure

TABLE IV.6 FERRY PORT FACILITIES—SULAWESI SELATAN

Name of port	*Location*	*Linkages*
Bajoe	Bone	to Kolaka (south-east Sulawesi)
Bira	Bulukumba	to Pamatata (Selayar)
Pamatata	Selayar	to Bira (Bulukumba)
Mamuju	Mamuju	to Balikpapan (east Kalimantan)

Source Ministry of Communications Sulawesi Selatan Regional Office pers. comm. Dec.1997.

Sea transport infrastructure

The main seaports for passenger movements in Sulawesi Selatan are Makassar port in Ujung Pandang, Pare-Pare port in Pare-Pare and Palopo port in the Luwu Regency.

TABLE IV.7 SEAPORT FACILITIES—SULAWESI SELATAN

Seaport	*Berth for passengers (metres)*	*Depth (LWS)*	*Terminal (m^2)*
Makassar	1 360	-9	3 619
Pare-Pare	245	-9	650
Palopo	56	-7	

Source Indonesian Port Corporation IV (1996).

TRANSPORT SERVICES

What routes exist?

Air transport

TABLE IV.8 DOMESTIC AIR ROUTES—SULAWESI SELATAN, 1996

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
1	Ujung Pandang–Surabaya	GA	B737	7
		MZ	B737	7
			F28	7
		SG	F100	14
			B737	7
		BO	B737	7
2	Ujung Pandang–Jakarta	GA	B737	17
			A300	7
		MZ	F100	7
		SG	F100	14
3	Ujung Pandang–Balikpapan	MZ	F28	5
			F27	7
		SG	F70	7
4	Ujung Pandang–Manado	GA	A300	7
		SG	F100	7
		BO	B737	7
5	Ujung Pandang–Mataram	MZ	F28	7
			F27	2
6	Ujung Pandang–Ambon	MZ	F28	16
		SG	F70	7
7	Ujung Pandang–Denpasar	GA	B737	7
		MZ	F28	7
8	Ujung Pandang–Maumere	MZ	F27	7

GA = Garuda
MZ = Merpati
SG = Sempatu
BO = Bouraq

Source Directorate General Air Communications (1997a).

Ferry transport

Ferry routes are contained in Table IV.6.

Sea transport

Pelni routes are listed in Appendix I. Makassar is the main port in Sulawesi Selatan for freight and passengers. Foreign cruise ships sometimes visit Ujung Pandang or Pare-Pare.

Frequency and travel time

There are public transport services from the capital of Ujung Pandang to Tana Toraja and Bulukumba, where tourist attractions are located. There are also car rentals available. In particular, the Ujung Pandang to Tana Toraja route is served by specific air-conditioned tourist buses and standard buses.

TABLE IV.9 ACCESS TO TOURIST ATTRACTIONS IN SULAWESI SELATAN

Location	*Transport mode*	*Travel time*	*Frequency*
Tana Toraja	Public transport	7 hours from	Every day
	Rental car	Ujung Pandang	Every time
	Air	30 minutes from Ujung Pandang	Once a day
Tanjung Bira	Public transport	5 hours from	Every day
	Car rental	Ujung Pandang	
Selayar	Ferry boat	2 hours from Bira	Twice a day

Source Ministry of Communications Sulawesi Selatan Regional Office pers. comm. Dec. 1997.

CURRENT AND HISTORIC DEMAND

Passenger transport

Air transport

TABLE IV.10 PASSENGER MOVEMENTS AT HASANUDDIN AIRPORT

	1989	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
International	16184	18507	14016	23354	30078	33976	46715	69596
Int. Transit	0	0	0	0	0	0	3	0
Domestic	594752	585216	624151	666185	721680	826911	982571	1058898
Dom. Transit	218181	266807	299108	316903	367795	417042	492707	514617
Total	829117	870530	937275	1006442	1119553	1277929	1521996	1643111

Source Directorate General Air Communications (1993) and (1997a).

TABLE IV.11 AIRCRAFT MOVEMENTS AT HASANUDDIN AIRPORT

	1989	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
International	102	114	86	142	189	202	478	830
Domestic	18392	19595	20415	21320	24180	27223	29442	31549
Local	1061	1924	2751	1921	1654	1201	1914	1410
Total	19555	21633	23252	23383	26023	28626	31834	33789

Source Directorate General Air Communications (1993) and (1997a).

Sea transport

TABLE IV.12 PASSENGER TRAFFIC AT PARE-PARE PORT

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
Embarkation	63479	62619	81109	91730	135779	170723	232038
Debarkation	84597	95762	117785	152905	194539	250170	160102
Total	148076	158381	198894	244635	330318	420893	392140

Source Indonesian Port Corporation IV (1996).

TABLE IV.13 PASSENGER TRAFFIC AT MAKASSAR PORT

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
Embarkation	355 504	381 949	346 445	386 627	393 819	385 164	371 164
Debarkation	318 769	321 615	386 107	413 286	405 975	475 334	428 486
Total	674 273	703 564	732 552	799 913	799 794	860 498	799 650

Source Indonesian Port Corporation IV (1996).

Tourism demand

TABLE IV.14 NUMBER OF DOMESTIC VISITORS TO SULAWESI SELATAN

Year	*Visitors*
1989	203 165
1990	266 289
1991	225 091
1992	311 684
1993	336 869
1994	351 433
1995	404 858

Source Regional Office of Department of Tourism, Post and Telecommunications Sulawesi Selatan pers. comm. Dec. 1997.

TABLE IV.15 NUMBER OF INTERNATIONAL VISITORS TO SULAWESI SELATAN BY NATIONALITY, 1986–1995

No.	Origin of State/ Nationality	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1	USA	2 645	2 596	2 574	2 791	6 834	7 292	7 653	10 083	22 648	27 168
2	Canada	810	508	507	727	2 101	2 439	2 667	2 733	4 672	7 091
3	Australia	1 445	1 346	1 414	1 328	2 657	3 782	4 571	4 803	9 541	11 522
4	New Zealand	217	275	204	284	175	562	682	768	1 586	1 992
5	Netherlands	4 116	5 313	8 040	6 346	13 692	13 608	15 580	23 883	23 368	30 479
6	Sweden	214	641	278	0	0	0	0	0	0	0
7	England	836	1 506	1 041	1 524	2 933	2 726	3 034	4 871	11 130	16 962
8	Spain	856	868	1 088	0	0	0	0	0	0	0
9	Italy	2 774	2 858	2 853	3 122	5 569	6 160	6 478	10 358	16 242	22 690
10	Germany	6 473	8 114	8 758	8 631	13 155	17 606	19 504	22 399	24 356	34 154
11	France	7 585	9 570	11 076	11 038	20 589	20 551	22 211	27 244	27 439	28 785
12	Switzerland	1 372	1 590	1 788	2 680	3 409	2 052	2 548	3 806	8 681	11 816
13	Japan	3 156	4 119	4 613	3 619	5 783	5 252	5 667	5 836	9 758	11 475
14	China/Taipei	237	462	1 253	2 952	3 396	2 875	3 635	3 929	4 522	4 582
15	Hong Kong	22	96	52	471	636	560	1 345	2 545	3 484	3 294
16	Philippines	148	183	128	0	0	0	0	0	0	0
17	Singapore	224	302	346	429	478	840	1 093	1 115	2 145	3 083
18	Malaysia	370	270	265	302	758	900	1 217	1 883	4 991	7 040
19	Others	4 150	4 916	13 224	11 471	12 952	12 890	17 809	25 758	23 973	23 565
Total		37 650	45 533	59 502	57 715	95 117	100 095	115 694	152 014	198 536	245 698

Source Regional Office Department of Tourism, Post and Telecommunications Sulawesi Selatan pers. comm. Dec. 1997.

TABLE IV.16 TOURIST DISTRIBUTION TO SULAWESI SELATAN BY REGENCY

No.	*Regency*	*1994*	*1995*	*1996*
1	Ujung Pandang	91 343	113 245	120 093
2	Tana Toraja	69 571	83 820	83 873
3	Pare-Pare	10 560	12 242	18 238
4	Luwu	7 078	9 816	5 869
5	Wajo	6 135	7 077	6 727
6	Bulukumba	4 738	6 024	7 810
7	Polmas	1 711	2 380	3 521
8	Other regencies	7 400	11 083	13 963
Total		198 536	245 687	260 094

Source Regional Office Department of Tourism, Post and Telecommunications Sulawesi Selatan pers. comm. Dec. 1997.

DEVELOPMENT ISSUES/PROBLEMS

- Roads to destinations are narrow, inhibiting the size of tourist buses.
- Tourism attractions are widely spread throughout the province and need to be more integrated.
- The transport infrastructure is adequate but services should be improved, particularly in relation to human resources.

APPENDIX V

SULAWESI UTARA

INTRODUCTION

Geography and population

Sulawesi Utara is one of four provinces on the island of Sulawesi. The population in 1995 was 2 572 400, giving a population density of 93.58 persons per square kilometre. Sulawesi Utara has an area of 27 487 square kilometres. Population growth was 4.47 per cent per annum on average for the years 1990–1995.

TABLE V.1 SULAWESI UTARA—BASIC GEOGRAPHY

No.	*Item*	*Description*
1	Area of region (km^2)	27487.63
2	Position	0°30–4°0' north latitude and 121°–127° east longitude
3	Municipalities	Gorontalo, Manado and Bitung
4	Regencies	Gorontalo, Bolaang Mongondow, Minahasa and Sangihe Talaud
5	Capital	Manado

Source Directorate General Air Communications (1997a).

Government administration

The province of Sulawesi Utara is divided into three municipalities and four regencies:

1. Manado Municipality, called Manado City, is the capital city of Sulawesi Utara.
2. Gorontalo Municipality, called Gorontalo City, is the entry point for the western region.

3. Bitung Municipality, called Bitung City, is the entry point for the northern region.
4. Gorontalo Regency, called Limboto City, is a developing region of agriculture and history tours.
5. Bolaang Mongondow Regency, called Kotamobagu City, is a developing region of maritime and history tours.
6. Minahasa Regency, called Tondano City, is the entry point for inland tours
7. Sangihe Talaud Regency.

TABLE V.2 POPULATION OF SULAWESI UTARA

Year	*Population*	*Density (person/km²)*
1990	2 455 800	89.34
1991	2 493 300	90.71
1992	2 515 800	91.52
1993	2 533 100	92.15
1994	2 558 500	93.08
1995	2 572 400	93.58
1996	2 686 300	97.73

Source Central Bureau of Statistics [BPS] [1997a].

Economy

Table V.3 illustrates the GRDP of Sulawesi Utara. GRDP per capita in 1995 was Rp 1 271 943.

TOURISM INFRASTRUCTURE

Tourism attractions

The variety of tourist attractions is shown in Table V.4. Close to 70 attractions are described, although the level of development is not clear. Sulawesi Utara is a potential tourism destination area for special interest type tourism. Tourism associated with diving has particular potential at Bunaken Marine Park.

TABLE V.3 GRDP OF SULAWESI UTARA, 1993–1996

(Million rupiahs)[a]

No.	*Sector*	*1993*	*1994*	*1995*	*1996*
1	Agriculture	775 145	829 837	902 024	974 312
2	Mining and quarrying	96 854	111 946	119 534	179 482
3	Manufacturing industries	238 303	260 496	286 859	315 835
4	Electricity, gas and water supply	16 927	18 783	22 039	25 171
5	Construction	302 226	331 946	364 742	400 694
6	Trade, restaurant and hotel	302 942	337 370	378 225	411 709
7	Transport and communication	391 319	414 379	456 225	493 182
8	Finance, rent of building and business services	151 409	164 507	176 544	190 718
9	Service	531 825	548 908	565 755	583 592
Total		2 806 950	3 018 172	3 271 947	3 574 695

a. Constant 1993 price.

Source Central Bureau of Statistics (BPS) (1997b).

TABLE V.4 TOURIST ATTRACTIONS IN SULAWESI UTARA

No.	*Attraction name*	*Type*	*Attractions*
Border area (Indonesia–Philippine)			
1	Miangas	Special interest	Hang gliding, water ski, fishing, golf, water bike
2	Narore	Special interest	Hang gliding, water ski, fishing, golf, water bike
3	Kokorotan	Special interest	Hang gliding, water ski, fishing, golf, water bike
4	Merampit	Special interest	Hang gliding, water ski, fishing, golf, water bike
5	Kawis	Special interest	Hang gliding, water ski, fishing, golf, water bike
6	Kawaluso	Special interest	Hang gliding, water ski, fishing, golf, water bike
7	Nanusa	Special interest	Hang gliding, water ski, fishing, golf, water bike

Continued on next page

TABLE V.4 TOURIST ATTRACTIONS IN SULAWESI UTARA (continued)

No.	Attraction name	Type	Attractions
Sangihe Talaud area			
1	Sangihe Islands	Natural, historic	Sea park, ex- Mokodompis King, Santiago King
2	Tahuna	Natural	Sea park
3	Manganitu	Historic	Cemetery of Steller (Christian Missionary)
4	Talaud Islands	Natural	Beach nature
5	Melangguane	Historic	Frame of World War II ship
6	Moronge	Culture, arts	Unique cemetery
Siau–Tagulandang–Biaro area			
1	Karangetan	Natural	Under-sea volcanic
Manado–Minahasa–Bitung area			
1	Bunaken	Natural	Sea park
2	Tanjung Pisok	Natural	Sea park
3	Malalayang	Natural	Beach
4	Tangkoko	Natural	Wildlife reserve, sea park
5	Batuangus	Natural	Wildlife reserve
6	Danowudu	Natural	Protective forest
7	Pulau Lembeh	Natural	Sea park
8	Tanjung Merah	Natural	Sea park
9	Gunung Klabat	Natural	Volcano
10	Pantai Kema	Natural	Sea park
11	Pantai Waleo	Natural	Sea park
12	Pantai Likupang	Natural	Sea park
13	Pulau Bangka	Natural	Sea park
14	Pulau Talise	Natural	Sea park
15	Pulau Lehaga	Natural	Sea park
16	Air Terjun Talawaan	Natural	Waterfall
17	Sawangan	Cultural art, Historic	Tradition, art, culture, archaeology
18	Airmandidi	Cultural art, Historic	Tradition, art, culture, archaeology
19	Danau Tondano	Natural, product	Lake, industry
20	Taman wisata Rembokem	Natural	
21	Air Panas Kawangkoan	Natural	
22	Tampusu	Product	Breeding area
23	Lahendong	Natural	Geothermal

Continued on next page

TABLE V.4 TOURIST ATTRACTIONS IN SULAWESI UTARA (continued)

No.	*Attraction name*	*Type*	*Attractions*
24	Danau Linow	Natural	Water park
25	Air Terjun Tonsea Lama	Natural	Waterfall
26	Tasik Ria	Product	Tourism industry
27	Gunung Lokon	Natural	Wildlife reserve
28	Gunung Mahawu	Natural	Wildlife reserve
29	Gunung Soputan	Natural	Wildlife reserve
30	Gunung Potong	Natural	Wildlife reserve
31	Air Panas Soputan	Natural	
32	Gunung Lengkoan/Emung	Natural	Wildlife reserve
33	Tomohon	Cultural art	Museum
34	Tompaso	Product	Horse race
35	Belang/Basaan	Natural	Nature and sea park
36	Ratatotok/Morea	Product	Gold mining
37	Danau Moat	Natural	
Bolaang-Mongondow area			
1	Kotamobagu	Natural, cultural art	Nature and tourism industry
2	Gunung Ambang	Natural	Mining tourism and hunting ground
3	Lolak	Natural	Sea park
4	Kotabunan	Natural	Sea park
5	Molibagu	Natural	Sea park
6	Pinolosian	Natural	Sea park
7	Taman Nasional Dumoga Bone	Natural	
Gorontalo area			
1	Gorontalo Municipality	Natural, Cultural art	Beach, museum, Otanaha fort, archaeology
2	Limboto	Product	Tourism industry
2	Pulau Saronde	Natural	Nature, sea park and hunting ground
3	Benteng Oranye	Cultural art	Tradition and attractions
4	Molosipat	Cultural art	Tradition and attractions
5	Popayato	Cultural art	Tradition and attractions
6	Lemito	Cultural art	Tradition and attractions
7	Bumbulan	Cultural art	Tradition and attractions
8	Marisa	Cultural art	Tradition and attractions
9	Tulada	Cultural art	Tradition and attractions
10	Pulau Torsiaje dan Popayato	Community life	Village, daily life of Bajo tribe

Source Gromang (1997).

Passenger transport infrastructure

Air transport

There are four airports in Sulawesi Utara with Sam Ratulangi (Manado) being the major air hub of the province. Table V.5 indicates the capability, location and facilities of Sulawesi Utara's airports.

Sam Ratulangi airport connects to the major Indonesian cities of Jakarta, Surabaya, Palu, Balikpapan and Ujung Pandang as well as to cities in neighbouring countries such as Singapore and Davao in the Philippines. The increasing role that Sam Ratulangi airport is playing runs parallel with economic development in the region.

TABLE V.5 SULAWESI UTARA - AIRPORT INFRASTRUCTURE

No.	*Airport*	*Max size aircraft*	*Infrastructure dimension (m)*		*Class*	*Development plan*
1	Sam Ratulangi	A300	R/W	2500 x 45 m	I	Aircraft max: A300
			T/W	200 x 23 m		R/W: 2800 x 45 m
			Apron	196 x 100 m		
			Terminal	3612 m^2		Terminal: 14917 m^2
2	Jalaludin	F27	R/W	1650 x 30 m	III	Aircraft max: B737
			T/W	115 x 23 m		R/W: 2000 x 30 m
				115 x 19 m		Terminal: 1248 m^2
			Apron	124 x 80 m		
			Terminal	1248 m^2		
3	Melangguane	C212	R/W	850 x 23 m	IV	Terminal: 120 m^2
			T/W	75 x 15 m		
			Apron	60 x 40 m		
			Terminal	66 m^2		
4	Naha	C212	R/W	1100 x 30 m	IV	
			T/W	75 x 15 m		
			Apron	40 x 60 m		
			Terminal	120 m^2		

Source Directorate General Air Communications (1997a).

Sea transport

There are 11 ports in Sulawesi Utara (Bitung, Manado, Gorontalo, Tahuna, Lirung, Ulu Siau, Kwandang, Kotabunan, Labuan Uki, Tilamuta and Likupang). Among these ports, only three (Bitung, Manado and Gorontalo) have a terminal that is normally used for passengers. Bitung

port is the main collector and distributor port for both goods and passengers. Table V.6 contains information on Sulawesi Utara's port infrastructure.

TABLE V.6 PORT INFRASTRUCTURE IN SULAWESI UTARA

No.	Berth	Length of berth (m)			Terminal (m^2)
		Concrete	Wood	Total	
1	Bitung	1 413		1 413	2 399
2	Manado				
3	Gorontalo			94	

Sources Bitung Port Administration pers. comm. Dec. 1997 and PT. (Persero) Pelabuhan Indonesia IV Cabang Bitung (1997).

Road transport

In 1996, 50.7 per cent of Sulawesi Utara's road network was surfaced with asphalt and more than 52 per cent is described as being in good or moderate condition (see Table V.7).

TRANSPORT SERVICES

What routes exist?

Air transport

Table V.8 shows the frequencies, aircraft type and operator of domestic air routes in Sulawesi Utara. Besides being the air transport hub serving smaller cities within the province, Sam Ratulangi airport is also a hub for air transport in northern Indonesia providing services that connect to other provinces and to cities in neighbouring countries.

Sea transport

The Pelni routes and frequencies are documented in Appendix I.

Ferry transport

There are three major ferry routes in Sulawesi Utara (see Table V.9).

Road transport

Travel time from Sam Ratulangi airport to Manado city using taxi, minibus or rental car takes approximately 20 minutes.

TABLE V.7 ROAD LENGTH IN SULAWESI UTARA BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

(km)

	State	*Province*	*Regency*	*Municipality*	*Total*
1995					
Type of surface					
- asphalted	771	1 113	2 022	727	4 633
- gravel	188	228	775	81	1 272
- earth	0	165	2 488	123	2 776
- others	0	0	818	19	837
Total	959	1 506	6 103	950	9 518
Road condition					
- good	959	1 172	1 102	603	3 836
- moderate	0	239	770	168	1 177
- damaged	0	95	2 102	67	2 264
- badly damaged	0	0	2 129	112	2 241
Total	959	1 506	6 103	950	9 518
1996					
Type of surface					
- asphalted	959	1 168	2 075	767	4 969
- gravel	0	240	795	85	1 120
- earth	0	173	2 553	130	2 856
- others	0	0	839	20	859
Total	959	1 581	6 262	1 002	9 804
Road condition					
- good	959	1 230	1 131	636	3 956
- moderate	0	251	790	177	1 218
- damaged	0	100	2 157	70	2 327
- badly damaged	0	0	2 184	119	2 303
Total	959	1 581	6 262	1 002	9 804

Source Central Bureau of Statistics (BPS) (1997a).

TABLE V.8 DOMESTIC AIR ROUTES—SULAWESI UTARA, 1996

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
1	Manado–Luwuk	Merpati	C212	1
2	Manado–Davao	Bouraq	B737	2
3	Manado–Gorontalo	Merpati	C212	7
		Bouraq	HS748	7
4	Manado–Ternate	Merpati	F27	2
			C212	8
5	Manado–Naha	Merpati	C212	3
6	Manado–Mangole	Merpati	C212	3
7	Manado–Surabaya	Sempati	B737	3
8	Manado–Denpasar	Garuda	DC10	2
9	Manado–Balikpapan	Sempati	F100	7
10	Manado–Sorong	Merpati	F27	1
11	Manado–Ujung Pandang	Garuda	A300	6
		Sempati	F100	7
		Bouraq	B737	7
12	Naha–Melangguane	Merpati	C212	2
13	Gorontalo–Palu	Merpati	C212	2

Source Directorate General Air Communications (1997a).

TABLE V.9 SULAWESI FERRY ROUTES

No.	*Route*	*Frequency*	*Operator*	*Passenger capacity*	*Vessel name*	*Vessel GRT*
1	Bitung–Ternate	3 trips per week	ASDP	400	Tuna	600
		1 trip per week	ASDP		Goropa	500
2	Bitung–Pananaru	2 trips per week	ASDP	400	Goropa	500
3	Gorontalo–Pagimana		ASDP	400	Baronang	500

Source Ministry of Communications Sulawesi Utara Regional Office pers. comm. Dec. 1997.

CURRENT AND HISTORIC DEMAND

Passenger transport

Air transport

See Table V.10.

TABLE V.10 SAM RATULANGI AIRPORT STATISTICS, 1993–1997

	Domestic					International				
	Aircraft		Passengers			Aircraft		Passengers		
Year	Arrival	Departures	Arrivals	Departures	Transit	Arrivals	Departures	Arrivals	Departures	Transit
1997	4 361	4 364	171 137	172 312	15 696	342	343	12 086	12 121	0
1996	4 023	4 001	173 444	177 136	7 199	332	331	11 946	11 724	0
1995	3 892	3 896	148 579	162 789	6 304	276	280	9 254	8 932	864
1994	3 545	3 708	135 028	135 720	4 890	308	309	8 838	8 921	936
1993	3 738	3 251	116 962	118 485	3 109	249	251	1 771	1 934	316

Source Sam Ratulangi Airport pers. comm. Dec. 1997, Ministry of Communications Sulawesi Utara Regional Office (1997a), Angkasa Pura I (1997).

Sea transport

TABLE V.11 BITUNG PORT STATISTICS, 1993–1997

		Passengers	
	Ship calls	*Disembark*	*Embark*
1993	3 427	118 903	113 039
1994	3 622	137 659	125 437
1995	3 593	119 317	114 674
1996	3 723	99 272	108 433
1997*	3 728	133 494	118 091

* Estimated.

Source PT. (Persero) Pelabuhan Indonesia IV Cabang Bitung (1997).

Ferry transport

TABLE V.12 SULAWESI UTARA FERRY TRAFFIC STATISTICS, JANUARY 1996 TO AUGUST 1997

	Bitung–Ternate			Bitung–Pananaru			Gorontalo–Pagimana*		
Month	Trips	Passengers	Cars	Trips	Passengers	Cars	Trips	Passengers	Cars
Jan-96	23	3 619	43	10	297	25			
Feb-96	20	2 574	18	9	296	13			
Mar-96	28	2 605	31	13	219	11			
Apr-96	16	1 542	21	8	102	39			
May-96	14	1 410	29	7	159	5			
Jun-96	14	1 287	29	-	-	-			
Jul-96	31	2 616	58	19	87	39			
Aug-96	36	2 199	60	17	145	32			
Sep-96	34	1 892	62	17	159	48			
Oct-96	35	2 591	48	19	254	23			
Nov-96	27	1 895	37	12	143	10			
Dec-96	30	2 289	56	14	116	11			
1996 Total	308	26 519	145	1 977	256	256			
Jan-97	19	2 409	41	10	216	21	15	2 095	28
Feb-97	24	2 523	63	8	188	21	14	3 826	54
Mar-97	33	2 437	92	18	264	32	16	2 180	45
Apr-97	38	2 261	61	18	302	25	15	2 004	33
May-97	36	2 291	68	17	387	44	15	1 263	39
Jun-97	34	4 055	66	17	375	26	15	2 765	47
Jul-97	34	4 505	61	19	382	31	16	3 243	49
Aug-97	27	3 059	67				15	2 037	48
1997 Total	245	23 540	519	107	2 114	200	121	19 413	343

* Statistics not available.

Source Ministry of Communications Sulawesi Utara Regional Office (1997b).

Tourism demand

TABLE V.13 FOREIGN AND DOMESTIC TOURISTS IN SULAWESI UTARA, 1992–1997

Year	*Foreign*	*Domestic*
1992	13 078	110 180
1993	18 767	110 986
1994	23 762	150 417
1995	30 285	643 283
1996	42 155	992 977
1997*	33 196	1 024 892

* Jan–Sept 1997.

Source Department of Tourism, Post and Telecommunications Sulawesi Utara Regional Office and the University of Sam Ratulangi (1997).

PLANNED DEVELOPMENTS

Tourism policy in Sulawesi Utara focuses on maintaining existing attractions and emphasises a 10-point priority scale for future tourism development. The 10 tourism development policies of Sulawesi Utara are:

1. Environmental tourism development
2. Science and technological tourism development
3. Tourism development based on skilled human resources
4. Improvement in tourism organisation and systems
5. Improvement in accessibility
6. Private sector participation in tourism development
7. Domestic tourism increase
8. Diversification of tourism products
9. Tourism marketing and promotion
10. Tourism awareness encouragement

TABLE V.14 VISITOR ARRIVALS BY COUNTRY OF RESIDENCE IN SULAWESI UTARA, JANUARY TO SEPTEMBER 1997

Country of residence	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Total*
ASEAN										
Singapore	205	189	126	96	113	136	411	399	442	2 117
Malaysia	31	30	47	63	57	84	127	172	159	770
Philippines										0
Thailand										0
Brunei										0
Total ASEAN	236	219	173	159	170	220	538	571	601	2887
East Asia										
Japan	109	87	39	84	107	99	208	356	413	1 502
Taiwan	150	198	128	161	153	179	199	261	272	1 701
Korea										0
China										0
Hongkong	23	14	3	15	39	51	59	77	66	347
Other										0
Total East Asia	282	299	170	260	299	329	466	694	751	3550
Europe										
Germany	59	67	58	95	87	76	153	259	245	1 099
U.K.	33	31	60	33	48	67	98	266	286	922
Netherlands	65	84	70	151	146	157	398	387	899	2 357
France	45	49	23	39	35	40	82	191	214	718
Italy	20	33	25	74	53	41	85	56	71	458
Switzerland	37	45	21	56	47	84	89	113	97	589

Continued on next page

TABLE V.14 VISITOR ARRIVALS BY COUNTRY OF RESIDENCE IN SULAWESI UTARA, JANUARY TO SEPTEMBER 1997 (continued)

Country of residence	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Total*
Sweden										0
Spain & Port.										0
Austria										0
Denmark										0
Belgium										0
Other										0
Total Europe	259	309	257	448	416	465	905	1272	1812	6143
Americas										
USA	75	81	52	43	70	81	183	231	192	1 008
Canada	36	52	28	65	21	20	51	44	38	355
Other America										0
Total America	111	133	80	108	91	101	234	275	230	1363
Oceania										
Australia	76	72	70	98	81	75	81	78	118	749
New Zealand	29	23	14	7	19	22	33	41	52	240
Other Oceania										0
Total Oceania	105	95	84	105	100	97	114	119	170	989
Others	821	992	1 417	1 972	1 847	1 637	3 031	3 115	3 432	18 264
Grand Total	1 814	2 047	2 181	3 052	2 923	2 849	5 288	6 046	6 996	33 196
Domestic	60 302	67 820	59 032	79 260	71 112	111 672	145 271	187 211	243 212	1 024 892

Source Department of Tourism, Post and Telecommunications Sulawesi Utara Regional Office (1997).

The Sulawesi Utara tourism master plan, Action Sulawesi Utara Towards 2000, has been set up as follows.

1. Development program
2. Tourism object and product development
3. Tourism package development.
4. Marketing and promotion program development
5. Human resources development
6. Accommodation development
7. Restaurant development

DEVELOPMENT ISSUES / PROBLEMS

Discussions held by the project team during a visit to the province indicated that the tourism sector faced some problems relating to transport infrastructure and services, including the following.

- The development of the tourism sector is very dependent on the development of Sam Ratulangi airport.
- The main competitor in the tourism sector for Sulawesi Utara is the Philippines, therefore it was suggested to the project team that a direct air route between Manado and Seibu would be advantageous.
- The capacity of local transport (for example tourist buses) is not sufficient to serve the tourist industry, particularly in Manado City.
- The human resources for travel bureaus are not sufficiently developed.
- More access routes from the Trans Sulawesi highway to the tourism attractions are needed.
- The influence of BIMP-EAGA on Sulawesi Utara is limited because of the problems with transport facilities.

APPENDIX VI

KALIMANTAN TIMUR

INTRODUCTION

Geography and population

Kalimantan Timur is one of four Kalimantan provinces and is the second largest province in Indonesia after Irian Jaya. It is located in the central area of Kalimantan Island and is expected to become important for Indonesian economic growth around 2000.

Kalimantan Timur has an area of 211 400 square kilometres, or 1.5 times the area of the islands of Java and Madura. The population in 1995 was estimated to be 2.331 million, giving a population density of 11.03 persons per square kilometre. Population growth averaged 3.71 per cent per annum for the period from 1990 to 1995.

Government administration

The province of Kalimantan Timur is divided into six secondary regions (municipalities and regencies), and two administrative cities:

1. Samarinda Municipality, called Samarinda City (the capital city).
2. Balikpapan Municipality, called Balikpapan City (the front gate to the southern region of the province).
3. Kutai Regency, called Tenggarong City (a front gate to the inland region of the province).
4. Pasir Regency, called Tanah Grogot (a developing region for agriculture and history tours).
5. Berau Regency, called Tanjung Redeb City (a developing region for maritime industries and history tours).
6. Bulungan Regency, called Tanjung Selor City (a front gate for inland tours).

7. Bontang Administrative City, (located in Kutai Regency).
8. Tarakan Administrative City, (located in Bulungan Regency, and called the front gate of the northern region of the province).

Economy

The regional economy at the end of the 1994–1995 financial year had a growth rate of 11.68 per cent per annum. During the first four years of the Five-Year Plan the annual growth rate averaged 9.06 per cent per annum.

Because of its natural wealth and resources, the province of Kalimantan Timur made large and internationally recognised contributions to Indonesian foreign exchange earnings.

Table VI.1 illustrates the GRDP of Kalimantan Timur. GRDP per capita in 1995 was Rp 7.89 million.

TABLE VI.1 GRDP OF KALIMANTAN TIMUR

(billion rupiahs)[a]

No.	*Sectors*	*1993*	*1994*	*1995*	*1996*
1	Agriculture	1 678	1 651	1 767	1 967
2	Mining and quarrying	4 800	5 345	5 710	5 996
3	Manufacturing industries	5 400	6 069	5 819	7 051
4	Electricity, gas and water supply	45	49	53	58
5	Construction	433	483	535	613
6	Trade, restaurant and hotel	1 431	1 553	1 674	1 856
7	Transport and communication	1 355	1 565	1 795	2 049
8	Finance, rent of building and business services	534	595	636	710
9	Service	346	382	413	463
Total		16 022	17 693	18 401	20 762

Note Figures may not add to totals due to rounding.
a. Constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TOURISM INFRASTRUCTURE

Tourism attractions

The contribution of the tourist sector in provincial income increased from Rp 48.67 million to Rp 100.81 million, or by 43.92 per cent per

annum, on average over a two-year period. Employment in this sector also increased from 6347 people to 7050 people, or by an average of 5.39 per cent per annum.

The variety and completeness of tourist attractions are illustrated in Table VI.2. Natural uniqueness and cultural attractions provide variety at many tourist sites.

There are no fewer than 150 tourist attractions throughout Kalimantan Timur, although not all of them have been developed (see Table VI.3).

TABLE VI.2 TOURISM ATTRACTIONS—KALIMANTAN TIMUR

No.	*Type*	*Tourism attraction*	*Location*
1	Nature potential	Tropical forest, rivers, rapids, wildlife reserve	Mahakam river corridor, forest area
2	Sea park and coast	Diving, releasing baby turtles, coral reef and fish	Derawan Islands
3	Adventure	Tracking, hiking, white water rafting	Mahakam river corridor
		Fast water current	Long Apari, Long Bangun,
		Observation of nature and culture	Riam Sungai Segah and Kelay
4	Ethnic	Daily life of Dayak Tribes	
		Residential area of Dayak Tribes	
		Traditional houses (lamin)	
		Traditional art and ceremonies	
		Traditional dancing performances	
5	History	Archaeological locations	Kutai, Pasir Balengkong, Bulungan, Sambaliung and Gunung Tabur
6	Cultural art	Museum	
		Cultural festival	
		Recreational places	
		Traditional markets for craft, arts and ceremony	
		Entertainment	

Source University of Gadjah Mada (1992, 1993).

TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR

No.	Attraction name	Type	Attractions	Condition
Samarinda Municipality				
1	Air Terjun Tagur Tinggi Belimau	Natural	Waterfall, nature scenery	Developed, promoted
2	Air Terjun Tanah Merah	Natural	Waterfall, nature scenery	Developed, promoted
3	Batu Besaung	Natural	Caving, stalagmite, stalactite	Not developed
4	Taman budaya Pampang	Community life	Native village and daily life of Dayak tribe	Developed, promoted
5	Tepian Mahakam	Natural	Nature scenery/river	Developed, promoted
6	Kompleks Citra Niaga	Product	Central art shops	Developed, promoted
7	Taman rekreasi remaja Rukmi Rahayu	Product	Recreation area/nature scenery	Developed, promoted
8	Masjid Kuno Samarinda	Historic	Historic religious building	Not developed
9	Industri pengolahan kayu	Product	Plywood factory and research of wood industry	Ready to promote
Balikpapan Municipality				
1	Taman rekreasi Pantai Manggar	Natural	Ski area	Developed, promoted
2	Taman rekreasi Gunung Bakaran	Natural	Camping ground, recreational area	Developed, promoted

Continued on next page

TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	*Attraction name*	*Type*	*Attractions*	*Condition*
3	Monumen perlawanan rakyat	Product	Historic monument and beach scenery	Developed, promoted
4	Kilang minyak Pertamina	Product	Oil industrial area	Ready to promote
5	Gunung Duff	Product	Housing area of Pertamina	Ready to promote
6	Tugu Australia	Historic	Archaeological site	Ready to promote
Kutai Regency				
1	Museum Mulawarman	Historic	Archaeological site	Promoted
2	Goa Sapari	Product	Nature travelling, stalactite, stalagmite	Not developed
3	Taman Ria Waduk Panji Sukaramai	Natural	Nature scenery	Promoted
4	Muara Kaman	Historic	Archaeological site	Not developed
5	Andau Keandg Kemurung	Natural	Nature/lake scenery	Not developed
6	Tahura Bukit Suharto	Natural	Forestry research and orang utan breeding	Ready to promote
7	Taman rekreasi Pantai Tanjung Harapan	Natural	Beach area with casuarina vegetation	Ready to promote
8	Taman rekreasi Andau Sungai Merdeka	Natural	Nature scenery, boating	Developed, promoted

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TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	Attraction name	Type	Attractions	Condition
9	Wisata buru Muara Badak	Natural	Hunting ground	Not developed
10	Pantai Marang Kayu	Natural	Sea park and coast/nature scenery	Not developed
11	Taman Nasional Kutai	Natural	Forest vegetation and wild animals	Developed, promoted
12	Pantai Beras Basah	Natural	Sea park and coast/nature scenery	Not developed
13	Pantai Teluk Kaba	Natural	Sea park and coast/nature scenery	Not developed
14	Industri pupuk Kaltim	Product	Industrial and research area	Ready to promote
15	PT. LNG Badak	Product	Industrial and research area	Ready to promote
16	Wisata buru Sangkulirang	Natural	Hunting ground	Not developed
17	Goa Mardua	Natural	Caving, stalactite, stalagmite	Not developed
18	Goa Ampanas Pangandan	Natural	Caving, stalactite, stalagmite	Not developed
19	Gemar Baru	Community life	Village/daily life of Dayak tribe Kayan	Promoted
20	Tanjung Manis	Community life	Village/daily life Dayak tribe Kenyah, nature travelling/ adventure	Promoted
21	Rantau Sentosa	Community life	Village/daily life Dayak tribe Kenyah, nature travelling/ adventure	Promoted
22	Long Segar	Community life	Village/daily life Dayak tribe Kayan, nature travelling/adventure	Promoted
23	Long Noran	Community life	Village/dailylife Dayak tribe Kenyah, nature travelling/adventure	Promoted

Continued on next page

TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	*Attraction name*	*Type*	*Attractions*	*Condition*
24	Desa Miau Baru	Community life	Village/daily life Dayak tribe Kayan, nature travelling/adventure	Promoted
25	Wisata buru Miau Baru	Natural	Hunting ground	Not developed
26	Goa Kong Beng	Natural	Historic cave	Promoted
27	Wisata buru Tabang	Natural	Hunting ground	Not developed
28	Desa Tabang	Community life	Village/daily life Dayak tribe	Promoted
29	Andau Semayang	Natural	Nature scenery, boating, pesut Mahakam	Promoted
30	Andau Melintang	Natural	Nature scenery, boating, pesut Mahakam	Promoted
31	Muara Muntai	Natural	Floating village of fishermen	Promoted
32	Andau Jempang	Natural	Nature scenery, boating	Promoted
33	Village nelayan Jantur	Community life	Village/daily life of fisherman Andau Jempang	Promoted
34	Tanjung Issuy	Community life	Village/daily life Dayak tribe Benuaq (Dayak Tunjung)	Promoted
35	Mancong	Community life	Village/daily life Dayak tribe Benuaq, Lamin, Mancong, Tenun Ulap Doyo	Promoted
36	Tolan	Community life	Village/daily life Dayak tribe	Promoted
37	Lambing	Community life	Village/daily life Dayak tribe	Promoted
38	Dilang Putih	Community life	Village/daily life Dayak tribe	Promoted
39	Muara Lawa	Community life	Village/daily life Dayak tribe Benuaq	Promoted

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TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	Attraction name	Type	Attractions	Condition
40	Jelmu Sibak	Community life	Village/daily life Dayak tribe	Promoted
41	Sambung Sembulan	Community life	Village/daily life Dayak tribe	Promoted
42	Air terjun Jantur Gemuruh	Natural	Waterfall, fast water current	Promoted
43	Cagar Alam Kersik Luway	Natural	Tropical forest and orchid park	Promoted
44	Air terjun Ambau	Natural	Nature scenery waterfall	Promoted
45	Eheng	Community life	Lamin Dayak tribe Tunjung	Promoted
46	Tering	Community life	Village/daily life Dayak tribe Bahau, traditional dance (hudoq)	Promoted
47	Jeram Long Bagun-Rukun Damai	Natural	Fast water current	Promoted
48	Datah Bilang	Community life	Village/daily life Dayak tribe Kenyah, grand triball hall, traditional dance	Promoted
49	Long Hubung	Community life	Village/daily life Dayak tribe Kayan (long ear), traditional dance (hudoq)	Promoted
50	Rukun Damai	Community life	Village/daily life suku Kenyah, traditional house (Lamin)	Promoted
51	Ujoh Bilang	Community life	Village/daily life Dayak tribe Penihing, nature travelling/adventure	Promoted
52	Long Bagun	Community life	Village/daily life Dayak tribe Bahau/Penihing, nature travelling/adventure	Promoted
53	Long Merah	Community life	Village/daily life Dayak tribe, nature travelling/adventure	Promoted
54	Long Lunuk	Natural		Promoted

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TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	Attraction name	Type	Attractions	Condition
55	Long Pahangai	Community life	Village/daily life Dayak tribe Modang, nature travelling/ adventure, fast water current	Promoted
56	Tiong Ohang	Community life	Village/daily life Dayak tribe, nature travelling/adventure	Promoted
57	Long Apari	Community life	Village/daily life Dayak tribe Bukad, nature travelling/ adventure	Promoted
58	Sanga-sanga	Historic	Historic building	Not developed
59	Tugu Khatulistiwa	Product	Equator monument	Not developed
60	Festival Erau Tenggarong	Cultural art	Art and cultural festival	Promoted
Pasir Regency				
1	Eks Kraton Sandurangas	Cultural art	Historic palace	Ready to promote
2	Kompleks makam Raja Sandurangas	Historic	Historic	Not developed
3	Perkebunan Kelapa Sawit Kuaro	Natural	Palm plantation	Ready to promote
4	Penangkaran Rusa Lolo	Natural	Deer observation	Ready to promote
5	Pantai Pasir Mayang	Natural	Sea park and coast, beach	Not developed
6	Pantai Teluk Aandg	Natural	Sea park and coast	Not developed
7	Wisata buru Desa Petanggis	Natural	Hunting ground	Not developed

Continued on next page

TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	Attraction name	Type	Attractions	Condition
8	Goa Soand	Natural	Caving, stalactite, stalagmite	Not developed
9	Batu Mangkulangit	Natural	Nature scenery	Not developed
10	Batu Liang Riut	Natural	Nature scenery	Not developed
11	Situs Kampung Kesungai	Historic	Megalithic totem	Not developed
12	Air terjun Gunung Rambutan	Natural	Waterfall, nature scenery	Not developed
13	Goa Batu Jorong	Natural	Caving, stalactite, stalagmite	Not developed
14	Batu Bertulis Nojon	Historic	Inscription history	Not developed
15	Goa Batu Liang Lempenai Liak	Natural	Caving	Not developed
16	Pulau Burung	Natural	Nature scenery	Not developed
17	Perkebunan Kelapa Sawit Long Ikis	Natural	Palm plantation	Ready to promote
18	Pesisir pantai Tanjung Jumelai Penajam	Natural	Nature scenery, sea park and coast	Not developed
19	Pesisir pantai Waru	Natural	Nature scenery, sea park and coast	Not developed

Continued on next page

TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	Attraction name	Type	Attractions	Condition
Berau Regency				
1	Eks Kraton Sambaliung	Historic	Historic building/palace	Not developed
2	Eks Kraton Gunung Tabur	Historic	Museum	Developed, promoted
3	Merasa	Community life	Village Dayak tribe Kenyah	Not developed
4	Merapun Kelay	Natural	Hunting ground	Not developed
5	Andau Sidung	Natural	Nature/lake scenery, rattan Segah, wild animals	Not developed
6	Long Laay	Community life	Village of Dayak tribe Kenyah	Not developed
7	Taman Laut Pulau Derawan	Natural	Sea park, scuba diving	Developed, promoted
8	Pulau Semama	Natural	'Linggisan' bird, turtle legg-laying, and 'biawak'animal	Not developed
9	Pulau Sangalaki	Natural	Sea park, scuba diving, turtle egg-laying location	Not developed
10	Pulau Kakaban	Natural	Lake, cave, satwa liar	Not developed
11	Pulau Maratua	Natural	Nature scenery/sea park and coast, pearl location	Not developed
12	Pulau Rabu-rabu	Natural	Pearl location	Not developed
13	Pulau Panjang	Natural	Hunting ground, coconut area	Not developed
14	Pulau Sambit - Mataha	Natural	Turtle, fish and shrimp breeds	Not developed
15	Pulau Biambangan	Natural	Turtle egg-laying location	Not developed

Continued on next page

TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	Attraction name	Type	Attractions	Condition
16	Karang Tigau	Natural	Nature scenery beach, sea park and wild animals	Not developed
17	Pesta laut Pulau Derawan	Cultural art	Cultural festival and sea parks	Developed, promoted
18	Sungai Lati	Community life	Village Dayak tribe Basap	Not developed
19	Dumaring	Community life	Village Dayak tribe Basap	Not developed
20	Taman buru Batu Putih	Natural	Hunting ground	Not developed
21	Taman buru Capuak	Natural	Hunting ground	Not developed
22	Pantai Andau Cermin	Natural	Nature/lake scenery	Not developed
Bulungan Regency				
1	Eks Kraton Bulungan	Historic	Historic building/palace	Developed, promoted
2	Kompleks masjid Kraton Bulungan	Historic	Historic building	Developed, promoted
3	Desa Jelarai Selor	Community life	Village (resettlement)/daily life Dayak tribe Kenyah	Developed, promoted
4	Desa Mara I	Community life	Village (resettlement)/daily life Dayak tribe	Developed, promoted
5	Wisata buru Pimping	Natural	Hunting ground	Not developed

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TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	*Attraction name*	*Type*	*Attractions*	*Condition*
6	Long Peso	Community life	Village / daily life Dayak tribe Kayan	Not developed
7	Long Lesan	Community life	Village / daily life Dayak tribe Kayan	Not developed
8	Pantai Amal	Natural	Sea park and coast	Promoted
9	Pantai Teluk Nibung	Natural	Nature scenery sea park and coast	Not developed
10	Benteng Tentara Jepang	Product	Historic building	Ready to promote
11	Kilang Minyak Pertamina	Product	Processing of oil refinery minyak	Ready to promote
12	Perkebunan Salak	Natural	'Salak' cultivation	Ready to promote
13	Lokasi pengakaran buaya	Natural	Crocodile breeding	Ready to promote
14	Pabrik Methanol	Product	Processing of methanol	Ready to promote
15	Perkebunan Coklat	Natural	Cacao cultivation	Ready to promote
16	Krayan	Community life	Border area, natural forest	Ready to promote
17	Long Pujungan	Community life	Village Dayak tribe, natural forest	Ready to promote
18	Apau Ping	Community life	Village / daily life Dayak tribe, Lamin, natural forest	Not developed
19	Apau Napu	Community life	Cave, natural forest	Not developed
20	Jeram Awon	Natural	Adventure, fast water current	Ready to promote
21	Pulau Sapi	Community life	Village / daily life Dayak tribe, natural forest, boating	Not developed

Continued on next page

TABLE VI.3 TOURISM ATTRACTIONS BY MUNICIPALITY AND REGENCY—KALIMANTAN TIMUR (continued)

No.	Attraction name	Type	Attractions	Condition
22	Malinau	Community life	Village / daily life Dayak tribe, natural forest, boating	Ready to promote
23	Long Ampung	Community life	Village / daily life Dayak tribe and culture, natural forest	Promoted
24	Long Nawang	Community life	Village / daily life Dayak tribe and culture, natural forest	Promoted
25	Nawang Baru	Community life	Village / daily life Dayak tribe and culture, natural forest	Promoted
26	Lidung Payau	Community life	Village / daily life Dayak tribe and culture, natural forest	Promoted
27	Sungai Barang	Community life	Village / daily life Dayak tribe and culture, natural forest	Promoted
28	Long Uro	Community life	Village / daily life Dayak tribe and culture, natural forest	Ready to promote
29	Long Temuyat	Community life	Village / daily life Dayak tribe and culture, natural forest	Ready to promote
30	Long Betaoh	Community life	Village / daily life Dayak tribe and culture, natural forest	Ready to promote
31	Mahak Baru	Community life	Village / daily life Dayak tribe and culture, natural forest	Ready to promote
32	Long Lebusan	Community life	Village / daily life Dayak tribe and culture, natural forest	Ready to promote
33	Bembrem	Natural	Giant waterfall	Ready to promote
34	Jeram Sungai Boh	Natural	Adventure, fast water current	Ready to promote

Source University of Gadjah Mada (1992, 1993).

TABLE VI.4 AIRPORT INFRASTRUCTURE IN KALIMANTAN TIMUR

No.	*Airport*	*Max size aircraft*	*Infrastructure dimension*		*Class*	*Development plan*
1	Sepinggan	A-300	R/W	2500 x 45 m^2	I	Aircraft max. : B-737
			T/W	2500 x 30 m^2		R/W : 2250 x 45 m^2
			Apron	709.5 x 87 m^2		Terminal : 2909 m^2
			Terminal	2909 m^2		
2	Juwata	F-27	R/W	1650 x 30 m^2	II	Aircraft max. : F-28
			T/W	90 x 20 m^2		R/W : 1850 x 30 m^2
				90 x 18 m^2		Terminal : 1700 m^2
			Apron	335 x 70 m^2		
			Terminal	2531 m^2		
3	Temindung	C-212	R/W	850 x 23 m^2	III	Aircraft max. : CN-235
			T/W	75 x 15 m^2		R/W : 1200 x 30 m^2
			Apron	60 x 40 m^2		Terminal : 1153 m^2
			Terminal	66 m^2		
4	Kalimarau	C-212	R/W	900 x 18 m^2	IV	Aircraft max. : C-212
			T/W	75 x 15 m^2		R/W : 900 x 23 m^2
			Apron	60 x 40 m^2		Terminal : 456 m^2
			Terminal	540 m^2		
5	Tanah Grogot	DHC-6	R/W	640 x 14 m^2	IV	Aircraft max. : DHC-6
			T/W	80 x 15 m^2		R/W : 640 x 14 m^2
			Apron	60 x 40 m^2		Terminal : 40 m^2
			Terminal	50 m^2		

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TABLE VI.4 AIRPORT INFRASTRUCTURE IN KALIMANTAN TIMUR (continued)

No.	*Airport*	*Max size aircraft*	*Infrastructure dimension*		*Class*	*Development plan*
6	Tanjung Harapan	DHC-6	R/W	939 x 23 m^2	V	Aircraft max. : C-212
			T/W	75 x 15 m^2		R/W : 939 x 23 m^2
			Apron	60 x 40 m^2		Terminal : 176.4 m^2
			Terminal	112 m^2		
7	Long Nawan	DHC-6	R/W	750 x 24 m^2	V	Aircraft max. : C-212
			T/W	75 x 10 m^2		R/W : 900 x 23 m^2
			Apron	40 x 40 m^2		Terminal : 50 m^2
			Terminal	-		
8	Data Dawai	DHC-6	R/W	799 x 23 m^2	V	Aircraft max. : C-212
			T/W	16 x 14 m^2		R/W : 900 x 23 m^2
			Apron	56 x 40 m^2		Terminal : 410 m^2
			Terminal	50 m^2		
9	Yuvai Semaring	DHC-6	R/W	900 x 23 m^2	V	Aircraft max. : C-212
			T/W	70 x 15 m^2		R/W : 900 x 23 m^2
			Apron	80 x 45 m^2		Terminal : 50 m^2
			Terminal	50 m^2		
10	Senipah	DHC-6	R/W	720 x 23 m^2	V	Aircraft max. : DHC-6
			T/W	75 x 15 m^2		R/W : 720 x 23 m^2
			Apron	70 x 40 m^2		Terminal : - m^2
			Terminal	-		

Source Directorate General Air Communications (1997a)

The location of attractions and their interest to travellers place Kalimantan Timur in the market segment of special interest tourism. It has potential for this type of traveller.

Passenger transport infrastructure

Air transport

There are 10 airports in Kalimantan Timur. The major airport of Sepinggan, located at Balikpapan, acts as an air transport hub serving smaller cities in the province such as Tarakan, Samarinda, Tanjung and other pioneer landing strips scattered all over region. Two of Kalimantan's airports are classified as either third-or fourth-class and five others as fifth-class or airstrips. Table VI.4 indicates the capability, location and facilities of Kalimantan Timur's airports.

Sepinggan airport connects to major Indonesian cities such as Jakarta, Surabaya, Manado, Pontianak and Ujung Pandang, as well as to cities in neighbouring countries such as Bandar Seri Begawan in Brunei Darussalam, and Darwin in Australia. The increasing role that Sepinggan airport is playing parallels economic development in the region. Prior to the onset of the financial crisis, plans for the expansion and development of existing facilities allowed for the accommodation of larger aircraft and more passengers, both domestic and international. An expansion of the air route network serving other important cities in neighbouring countries was also expected.

Sea transport

There are about 15 ports in Kalimantan Timur among which Balikpapan port serves as a collector and distributor port for both goods and passengers. Information on the dimension of berths and terminals at the major ports is illustrated in table VI.5. Only seven of the ports have a passenger terminal.

Road transport

In 1995, 32.5 per cent of Kalimantan Timur's road network was surfaced with asphalt and more than 60 per cent was described as being in either good or moderate condition (see table VI.6). In 1996 the proportion asphalted increased to 35.4 per cent. However, the proportion described as good or moderate remained essentially unchanged.

TABLE VI.5 BERTH DIMENSIONS IN KALIMANTAN TIMUR'S PORTS

No.	Berth	Length of berth (m)			Terminal (m^2)
		Concrete	Wood	Total	
1	Balikpapan	539	66	605	2500
2	Samarinda	827	50	877	800
3	Tarakan	175	0	175	850
4	Nunukan	100	60	160	240
5	S. Nyamuk	0	20	20	0
6	Tg. Selor	0	40	40	150
7	Tg. Redeb	148	0	148	200
8	P. Bunyu	105	0	105	0
9	Sangkulirang	40.5	21	61.5	0
10	Lhok Tuan	0	45	45	0
11	Tanjung Laut	52	38	90	300
12	Tanah Grogot	70	80	150	0

Source Ministry of Communications Kalimantan Timur Regional Office (1997).

TRANSPORT SERVICES

How tourists get to the attractions

Visitors travelling to Kalimantan Timur by air usually arrive via Sepinggan airport at Balikpapan City. Direct inter-provincial flights do not normally fly to the capital of Samarinda because the biggest aircraft that can be handled at the Samarinda airport is a C212. It takes about 40 minutes to fly from Balikpapan to Samarinda or three hours by minibus or rental car. Transport modes such as bus, taxi, rental car, boat and aeroplane operate from Samarinda to the major tourism attractions (see Table VI.7).

Air transport

Table VI.8 shows the operator, frequencies and aircraft type for the domestic air routes in Kalimantan Timur. In addition to being an air transport hub serving smaller cities in the province, Balikpapan airport is also a hub for north-east Indonesian provinces and is connected to cities in neighbouring countries.

TABLE VI.6 ROAD LENGTH BY RESPONSIBILITIES, TYPE OF SURFACE AND CONDITION IN KALIMANTAN TIMUR, 1995 AND 1996

(km)

	State	*Province*	*Regency*	*Municipality*	*Total*	*Proportion (%)*
1995						
Type of surface						
- asphalted	596	494	592	495	2 177	32.5
- gravel	200	579	896	142	1 817	27.1
- earth	0	478	1 331	23	1 832	27.4
- others	0	233	640	0	873	13.0
Total	796	1 784	3 459	660	6 699	100.0
Road condition						
- good	796	1 551	369	120	2 836	42.3
- moderate	0	116	886	271	1 273	19.0
- damaged	0	117	876	89	1 082	16.2
- badly damaged	0	0	1 328	180	1 508	22.5
Total	796	1 784	3 459	660	6 699	100.0
1996						
Type of surface						
- asphalted	796	517	615	539	2 467	35.4
- gravel	0	606	932	154	1 692	24.3
- earth	0	500	1 384	25	1 909	27.4
- others	0	244	665	0	909	13.0
Total	796	1 867	3 596	718	6 977	100.0
Road condition						
- good	796	1 624	383	130	2 933	42.0
- moderate	0	121	921	295	1 337	19.2
- damaged	0	122	911	97	1 130	16.2
- badly damaged	0	0	1 381	196	1 577	22.6
Total	796	1 867	3 596	718	6 977	100.0

Source Central Bureau of Statistics (BPS) (1997a).

TABLE VI.7 ACCESS TO THE MAIN TOURIST ATTRACTIONS IN KALIMANTAN TIMUR

Area	*Mode*	*Transport service type*	*Frequency*	*Tariff (Rp)*	*Travel time*
Samarinda	Road	Minibus (12 passenger)		300	
Bontang–Samarinda	Road	Bus	28 times per day	3 000	2 - 3 hours
		Private rental car		30 000	2 hours
Samarinda–Balikpapan	Road	Bus	78 times per day	2 700	3 - 4 hours
		Taxi (max 4 passenger)		30 000	3 hours
	Air transport	C212	4 times per day	53 000	40 minutes
Samarinda–Handil Dua	River		2 times per day	2 500	4 hours
Balikpapan–Handil Dua	Road	Bus		3 000	2 hours
Samarinda–Tenggarong	Road	Bus	1 time per day	1 450	1.5 hours
		Taxi (4 pass.)		12 000	1.5 hours
	River	Long boat	2 times per day	1 000	2 hours
		Ketinting (2-3 pass.)		25 000	2 hours
		Speed boat (4-6 pass.)		45 000	0.5 hours
Koridor Mahakam	Air transport	ASAHI Airways	1 - 2 times per week	45 000	

Source University of Gadjah Mada (1992, 1993).

TABLE VI.8 DOMESTIC AIR ROUTES—KALIMANTAN TIMUR PROVINCE, 1996

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
1	Balikpapan–Pontianak	Merpati	F28	3
2	Balikpapan–Tawau	Merpati	F28	2
		Bouraq	BNI	3
3	Balikpapan–Ujungpandang	Merpati	F28	5
		Sempati	F70	7
4	Balikpapan–Berau	Bouraq	BNI	6
			BNT	14
5	Samarinda–Balikpapan	Bouraq	BNT	18
6	Balikpapan–Banjarmasin	Merpati	F27	18
7	Balikpapan–Palangkaraya	Sempati	F27	7
8	Balikpapan–Palu	Bouraq	B737	7
9	Balikpapan–Tarakan	Merpati	F27	7
		Sempati	F27	14
		Bouraq	HS748	14
10	Balikpapan–Surabaya	Merpati	F28	7

Source Directorate General Air Communications (1997a).

Sea transport

The Pelni routes and frequencies are documented in Appendix I.

CURRENT AND HISTORIC DEMAND

Passenger transport

Air transport

Statistics of airport demand in Kalimantan Timur are shown in Table VI.8 and Table VI.9.

TABLE VI.9 TRAFFIC STATISTICS OF MAIN AIRPORTS IN KALIMANTAN TIMUR, 1993–1997

	Domestic					International				
	Aircraft		Passengers			Aircraft		Passengers		
Year	Arrival	Departures	Arrivals	Departures	Transit	Arrivals	Departures	Arrivals	Departures	Transit
Sepinggan										
1993	18 905	18 940	395 368	376 970	45 968	180	181	3 566	3 629	0
1994	18 581	18 537	429 001	423 410	75 178	174	194	3 217	3 260	0
1995	18 615	18 610	474 895	499 438	117 764	444	456	12 029	11 525	101
1996	20 316	20 243	542 644	566 637	113 255	476	490	6 647	6 437	135
1997	15 755	15 585	445 766	438 295	56 280	263	331	3 256	5 009	0
Temindung										
1994	2 183	2 159	8 746	11 447						
1995	4 445	4 368	25 429	27 350						
1996	5 797	5 787	38 051	31 013						
1997	9 682	9 682	83 786	54 633						
Tarakan										
1994	1 942	1 945	23 543	26 198						
1995	5 780	5 782	63 449	66 016						
1996	5 251	5 250	66 303	69 303						
1997	10 200	10 187	123 987	123 695						
Tg. Redeb										
1994	996	996	6 338	7 082						
1995	2 925	2 925	23 579	28 373						
1996	3 933	3 933	30 738	34 199						
1997	8 419	8 419	77 212	89 117						

Source Ministry of Communications Kalimantan Timur Regional Office (1997); Angkasa Pura 1 (1998).

Sea transport

TABLE VI.10 KALIMANTAN TIMUR PORT SHIP CALL STATISTICS, 1994–1998

Ship calls

Port	*1994*	*1995*	*1996*	*1997*	*1998*[a]
Balikpapan	6 330	6 458	6 455	6 519	6 583
Samarinda	2 950	4 280	4 321	5 316	6 540
Tarakan	4 090	4 273	4 162	4 201	4 240
Nunukan	1 019	1 143	1 265	1 409	1 570
S. Nyamuk	561	613	805	968	1 165
Tg. Selor	1 589	1 526	2 241	2 722	3 305
Tg. Redeb	1 703	2 199	2 310	2 705	3 167
P. Bunyu	1 008	712	897	882	867
Sangkulirang	396	381	427	445	463
Sangata	685	642	912	1 075	1 267

a. Estimated.

Source Ministry of Communications Kalimantan Timur Regional Office (1997).

TABLE VI.11 KALIMANTAN TIMUR PORT PASSENGER STATISTICS, 1994–1998

('000)

	Passengers									
	1994		*1995*		*1996*		*1997*		*1998*[a]	
Port	Disembark	Embark	Disembark	Embark	Disembark	Embark	Disembark	Embark	Disembark	Embark
Balikpapan	197.7	200.3	192.3	213.0	172.4	175.1	161.1	165.2	150.5	155.7
Samarinda	46.1	57.1	82.7	71.6	88.1	79.0	126.0	93.1	180.6	109.6
Tarakan	126.3	145.7	116.9	130.9	103.2	103.7	93.3	87.7	84.4	74.1
Nunukan	82.0	75.3	94.3	80.2	87.9	95.6	91.5	107.8	95.3	121.6
S. Nyamuk	11.2	9.3	6.5	5.4	9.3	10.5	9.4	13.3	9.4	16.8
Tg. Selor	25.6	24.2	19.9	21.6	31.5	35.7	37.1	45.3	43.8	57.7
Tg. Redeb	23.6	20.1	30.9	30.6	41.7	37.9	55.5	52.2	73.9	72.0
P. Bunyu	10.8	10.1	4.4	4.7	0.1	0.1	0.03	0.03	0.007	0.008
Sangkulirang	6.4	6.4	6.5	5.2	6.9	7.6	6.8	8.6	6.9	9.8
Sangata	0	0	0	0	0.4	0	0	0	0	0

a. Estimated.

Source Ministry of Communications Kalimantan Timur Regional Office (1997).

Tourist demand

Tourist numbers increased from 984 348 in 1993 to 1 727 007 in 1996. Over this period of time, numbers increased at an average annual rate of 19.1 per cent.

In 1996 foreign tourists totalled 51 699—53 per cent more than the year before. Tourists from Asia accounted for 72 per cent of foreign tourists; Europe 12.1 per cent; North America 9.5 per cent; Oceania 2 per cent; and other countries 4.2 per cent. Table VI.12 illustrates the tourist numbers from foreign countries in detail for the first nine months of 1997.

TABLE VI.12 VISITOR ARRIVALS IN KALIMANTAN TIMUR BY COUNTRY OF RESIDENCE, JANUARY TO SEPTEMBER 1997

Country of residence	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Total*
ASEAN										
Singapore	5	2	4	-	-	2	-	-	1	14
Malaysia	-	-	-	-	-	-	1	1	-	2
Philippines	1	47	57	18	58	2	46	82	2	313
Thailand	52	209	169	128	256	142	116	254	48	1374
Brunei										0
Total ASEAN	*58*	*258*	*230*	*146*	*314*	*146*	*163*	*337*	*51*	*1703*
East Asia										
Japan	25	12	11	10	22	5	-	23	17	125
Taiwan	15	25	97	75	172	4	80	236	16	720
Korea	3	18	13	1	19	17	4	210	7	292
China	36	30	50	96	249	56	39	221	21	798
Other									4	4
Total E. Asia	*79*	*85*	*171*	*182*	*462*	*82*	*123*	*690*	*65*	*1939*
Europe										
Germany	16	12	28	5	4	6	5	10	20	106
UK	9	-	-	-	1	1	3	30	14	58
Netherlands	98	68	83	72	93	211	485	64	272	1446
France	8	2	5	3	2	5	1	6	23	55
Italy	5	3	7	1			2	1	3	22
Switzerland	5	4	7	2	4	2	4	-	7	35
Sweden	7	-	4	2	-	-	3	4	-	20
Spain & Portugal	-	1	-	1	-	-	-	-	2	4

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TABLE VI.12 VISITOR ARRIVALS IN KALIMANTAN TIMUR BY COUNTRY OF RESIDENCE, JANUARY TO SEPTEMBER 1997 (continued)

Country of residence	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Total*
Austria	1	4	11	-	1	-	1	-	2	20
Denmark	-	6	2	-	-	-	1	1	1	11
Belgium	-	1	1	5	1	-	1	5	-	14
Other	-	-	-	-	-	-	-	-	1	1
Total Europe	*149*	*101*	*148*	*91*	*106*	*225*	*506*	*121*	*345*	*1792*
North America										
USA	15	7	14	15	5	3	2	35	15	111
Canada	6	3	2	-	-	1	2	4	15	33
Other America	-	-	-	-	-	-	-	-	-	0
Total North America	*21*	*10*	*16*	*15*	*5*	*4*	*4*	*39*	*30*	*144*
Oceania										
Australia	26	10	20	117	10	12	47	332	46	620
New Zealand	-	-	-	2	-	-	-	39	-	41
Other Oceania	-	-	-	-	-	-	-	-	-	0
Total Oceania	*26*	*10*	*20*	*119*	*10*	*12*	*47*	*371*	*46*	*661*
Others	33	19	605	35	59	2	12	9	1	702
Grand Total	366	483	1190	588	956	471	855	1567	538	6941

Source Regional Office of the Department of Tourism, Post and Telecommunications, pers. comm. Dec. 1997.

FUTURE TOURISM DEMAND

The Sixth Five-Year Development Plan (year 1994–1995 to 1998–1999) had a target of 162 000 foreign tourists by the end of the plan. The target was based on an assumed average growth rate of 32.32 per cent per annum. Domestic tourism was anticipated to grow at the lower rate of 12 per cent per annum (University of Gadjah Mada 1992). The plan recognised that the target required the simultaneous development of tourism products, infrastructure and establishment of marketing and service capabilities.

Table VI.13 shows details of future tourist demand by tourist development area (TDA) as anticipated in the tourism master plan (University of Gadjah Mada 1992).

TABLE VI.13 ESTIMATED TOURIST DEMAND BY TOURIST DEVELOPMENT AREA IN KALIMANTAN TIMUR

('000)

		TDA (Tourist development area)												
		I Long Naw	*II* Long Paha	*III* Long Iram	*IV* Muar Wah	*V* Sam	*VI* Balik	*VII* Tana Grog	*VIII* Bont	*IX* Taniu Rede	*X* Tara	*XI* Taniu Selor	*XII* Long Bawa	*Total*
1991	International	2	1	3	0	4	3	0	1	1	1	0	0	16
	Domestic	32	42	53	11	117	127	53	11	42	21	11	11	530
	Total	34	44	56	11	120	130	53	12	44	23	11	11	549
1992	International	2	2	4	0	5	4	0	2	1	2	0	0	24
	Domestic	24	32	40	8	88	96	40	8	32	16	8	8	402
	Total	26	34	44	9	93	100	41	10	34	18	9	9	425
1993	International	3	2	5	1	6	4	1	2	2	2	1	1	30
	Domestic	30	39	49	10	109	118	49	10	39	20	10	10	493
	Total	33	42	54	10	115	122	50	12	41	22	10	10	523
1994	International	4	3	6	1	8	6	1	3	2	3	1	1	40
	Domestic	36	48	60	12	132	144	60	12	48	24	12	12	601
	Total	40	51	66	13	140	151	61	15	50	27	13	13	641
1995	International	5	4	8	1	10	8	1	4	3	4	1	1	52
	Domestic	44	58	73	15	160	174	73	15	58	29	15	15	725
	Total	49	62	81	16	170	182	74	19	61	33	16	16	777

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TABLE VI.13 ESTIMATED TOURIST DEMAND BY TOURIST DEVELOPMENT AREA IN KALIMANTAN TIMUR (continued)

('000)

		TDA (Tourist development area)												
		I	*II*	*III*	*IV*	*V*	*VI*	*VII*	*VIII*	*IX*	*X*	*XI*	*XII*	*Total*
		Long Naw	*Long Paha*	*Long Iram*	*Muar Wah*	*Sam*	*Balik*	*Tana Grog*	*Bont*	*Taniu Rede*	*Tara*	*Taniu Selor*	*Long Bawa*	
1996	International	7	6	12	1	15	12	1	6	4	6	1	1	73
	Domestic	52	69	87	17	190	208	87	17	69	35	17	17	866
	Total	59	75	98	19	205	219	88	23	74	40	19	19	938
1997	International	10	8	15	2	19	15	2	8	6	8	2	2	95
	Domestic	61	82	102	20	225	245	102	20	82	41	20	20	1 021
	Total	71	89	117	22	244	260	104	28	87	48	22	22	1 116
1998	International	12	10	20	2	25	20	2	10	7	10	2	2	124
	Domestic	71	95	119	24	262	285	119	24	95	48	24	24	1 189
	Total	84	105	139	26	286	305	121	34	103	58	26	26	1 313
1999	International	16	13	26	3	32	26	3	13	10	13	3	3	162
	Domestic	82	109	137	27	300	328	137	27	109	55	27	27	1 366
	Total	98	122	162	31	333	354	140	40	119	68	31	31	1 528
2000	International	21	17	34	4	42	34	4	17	13	17	4	4	210
	Domestic	93	124	155	31	340	371	155	31	124	62	31	31	1 546
	Total	114	141	188	35	382	405	159	48	136	79	35	35	1 756

Continued on next page

TABLE VI.13 ESTIMATED TOURIST DEMAND BY TOURIST DEVELOPMENT AREA IN KALIMANTAN TIMUR (continued)

('000)

		TDA (Tourist development area)												
		I Long Naw	II Long Paha	III Long Iram	IV Muar Wah	V Sam	VI Balik	VII Tana Grog	VIII Bont	IX Taniu Rede	X Tara	XI Taniu Selor	XII Long Bawa	Total
2001	International	27	22	43	5	54	43	5	22	16	22	5	5	271
	Domestic	104	138	173	35	380	414	173	35	138	69	35	35	1 725
	Total	131	160	216	40	434	457	178	56	154	91	40	40	1 996
2002	International	35	28	56	7	70	56	7	28	21	28	7	7	348
	Domestic	114	152	190	38	418	456	190	38	152	76	38	38	1 898
	Total	149	180	246	45	487	511	197	66	173	104	45	45	2 246
2003	International	45	36	72	9	90	72	9	36	27	36	9	9	450
	Domestic	124	165	206	41	453	494	206	41	165	82	41	41	2 060
	Total	169	201	278	50	543	566	215	77	192	118	50	50	2 510
2004	International	56	45	90	11	113	90	11	45	34	45	11	11	563
	Domestic	133	177	221	44	486	530	221	44	177	88	44	44	2 208
	Total	189	222	311	55	598	620	232	89	210	133	55	55	2 771
2005	International	70	56	113	14	141	113	14	56	42	56	14	14	705
	Domestic	141	187	234	47	515	562	234	47	187	94	47	47	2 341
	Total	211	244	347	61	656	674	248	103	230	150	61	61	3 046

Note Based on actual data for 1984 to 1991.

Source University of Gadjah Mada (1992, 1993).

PLANNED DEVELOPMENTS

The strategy for the region's tourism development is expressed in the priorities included in the tourism master plan.

The strategy of product development

The development of Kalimantan Timur tourism:

- is based on the natural potential of the province (forest and rivers), the inland ethnic culture, and is oriented towards conservation efforts;
- emphasises the market segment of special interests and adventure, which is based on the rivers and forest potential as the main tourist attractions; and
- emphasises the integration of provincial and regional (Kalimantan) attractions.

The priority order for tourism development and the territorial arrangement is as follows.

Priority 1

Priority 1 covers the areas of Kayan-Pujungan (Bulungan Regency), Mahakam (Kutai Regency) and Samarinda Municipality. The plan is for an integrated development of the hinterlands in a spinal column along the Mahakam River corridor. The development is based on the natural, cultural and ethnic attractions of the region.

Priority 2

Priority 2 covers a large part of Bulungan and Berau Regency. The plan is for integrated development of limited maritime tourist regions, such as the Archipelago of Derawan, Sangalaki, Samama, Maratua and Karaban as the main attractions, supported by the inland natural and cultural potential of the region.

Priority 3

Priority 3 covers areas in the middle regency. The integrated development of Bontang-Sangkulirang and Muara Wahau areas is based on developing industrial and city tours as the main attractions, supported by natural and cultural attractions.

Priority 4

Priority 4 covers the municipality of Balikpapan and the regency of Pasir. Integrated development of the two areas is based on agricultural tourism as the main attraction supported by cultural, historical and industrial tourism.

The strategy for improved accessibility and infrastructure development

The tourism master plan (University of Gadjah Mada 1992) calls for accessibility and infrastructure development to be based on:

- development that encourages the economic growth and cultural integration of isolated regions;
- development of priority attractions supported by modal diversification;
- creation of networks between the tourist attractions and the development of diversified potential new attractions;
- development of interesting and efficient journeys for tourists and achievement of some scale economies; and
- enlargement of transport networks to accommodate individual preferences using either one or more modes so as to reflect the importance of each tourism market segment.

Development of the transport system

The tourism master plan (University of Gadjah Mada 1992) also commented on the development of the transport system.

- Airport development must support tourism activities and also have regard to increasing facilities necessary for safety.
- Development of the land transport network must focus on its main role in distribution, not just for providing access to tourism attractions.
- Development of river transport must be maximised by anticipating and correcting the silting-up of rivers, which reduces their navigability.

DEVELOPMENT ISSUES/PROBLEMS

Discussions held during the field trip showed that the province faced some problems relating to transport infrastructure and services. In summary these are as follows.

- The transport infrastructure and means of transport are limited.
- Flight timetables for hinterland destinations are unreliable because weather conditions are difficult to predict.
- The main tourist attractions are widely distributed and generally very isolated.
- Travel bureaus are not well developed and consequently promotion of the tourist attractions is also not well developed.
- River transport tariffs are negotiable and depend very much on the weather.

APPENDIX VII

MALUKU

INTRODUCTION

Geography, administration and population

Maluku consists of about 1000 islands spread over a total area of 851 000 square kilometres. The land area is only around 10 per cent of the total area, being 85 728 square kilometres. It extends approximately 1150 kilometres from north to south and straddles the equator. The distance from west to east is approximately the same as from north to south.

Most of the islands are uninhabited and just over half are described as mountainous. The largest island is Seram (18 625 square kilometres) followed by Halmahera (18 000 square kilometres), Buru (9000 square kilometres) and Yamdena (5058 square kilometres). Ambon City, the capital city of the province, is located on Ambon Island, which is relatively small (761 square kilometres) (Provincial Government of Maluku 1997, pp. 17–18).

Maluku has five regencies (including the municipality of Ambon). The administrative structure of the province is shown in Table VII.1.

The population in 1996 was estimated to be 2.14 million, giving a population density of 25 persons per square kilometre. South-east Maluku has the lowest density—about 12 persons per square kilometre (Provincial Government of Maluku 1997, p. 8; Central Bureau of Statistics 1998). By the year 2005 the population is expected to have increased to 2.8 million (Provincial Government of Maluku 1992, p. II–5).

TABLE VII.1 ADMINISTRATIVE STRUCTURE OF MALUKU

Regency (Kabupaten)	*Regency capital*	*Districts*	*Towns (Desa)*	*Villages (Kota)*
Municipality of Ambon	Ambon	3	27	23
Central Maluku	Masohi	18	11	336
North Maluku	Ternate	21	27	565
Central Halmahera	Soa Siu	6	3	100
South-east Maluku	Tual	8	9	415
Total		56	77	1 439

Source Provincial Government of Maluku (1997, p. 29).

Economy

Table VII.2 illustrates the growth in the GRDP of Maluku. The main source of income for most people in Maluku is agriculture. Sectors of the economy involved in the service industries, such as hotel and restaurant businesses, and the processing of raw materials, such as sea products and forest products, are growing rapidly (Provincial Government of Maluku 1997, p. 9).

TABLE VII.2 GRDP OF MALUKU IN CONSTANT 1993 PRICES, 1993–1996

(Rp million)

Sector	*1993*	*1994*	*1995*	*1996*
Agriculture	728 124	762 338	746 935	767 973
Mining and quarrying	116 154	121 199	156 351	183 867
Manufacturing industries	461 737	481 333	508 688	538 180
Electricity, gas and water supply	12 296	13 895	15 400	17 117
Construction	157 432	175 687	210 622	231 881
Trade, restaurant and hotel	415 997	467 704	527 605	562 195
Transport and communication	133 162	149 071	161 350	178 657
Finance, rent of building and business services	150 289	153 612	160 741	173 240
Services	278 012	288 292	294 987	316 833
Total	2 453 203	2 613 131	2 782 679	2 969 943

Source Central Bureau of Statistics (BPS) (1997b).

Between 1993 and 1996 the GRDP of Maluku grew at an annual rate of 6.6 per cent in real terms. Growth was higher between 1983 until 1993 when the growth rate was 8.1 per cent per annum in real terms. During this 10-year period, north and central Maluku grew faster than the other regencies, at annual rates of 8.5 per cent and 9.0 per cent respectively (Provincial Government of Maluku 1992, p. II-25, Provincial Government of Maluku 1997, p. 79).

North Maluku, central Maluku and Ambon make the major contributions to the economy. Although central Halmahera contributes a relatively low proportion of the provincial GRDP, it has a high GRDP per capita, second only to the municipality of Ambon (see Table VII.3). Its high per capita income is most probably due to the mining of nickel ore on Gebe Island.

The strategy of current development plans in Maluku is to consider the sea as a resource that links the islands of the province rather than separating them. The idea is that sea resources should be a target for development as well as the land. To facilitate the implementation of this concept, the province has been divided 'into eight clusters of islands that share ecosystems, natural resources, culture and socioeconomic trends' (Provincial Government of Maluku 1997, p. 80). The clusters are shown in Table VII.4 and illustrated in Figure VII.1.

Each cluster is being separately studied and prepared for development. Seram, Morotai and the Kai Islands will be the first islands where rapid development is expected to occur.

TABLE VII.3 GRDP PER CAPITA IN 1993 PRICES, 1993

Regency	*GRDP (Rp billion)*	*1993 population ('000)*	*Per capita GRDP ('000 Rp)*
Maluku Utara	692.32	588.4	1 176.6
Maluku Tengah	669.89	642.6	1 042.5
Maluku Tenggara	289.99	313.6	924.6
Halmahera Tengah	229.63	154.4	1 487.1
Ambon	571.38	300.4	1 902.3
Total	2 453.20	1 999.5	1 226.9

Source BTE estimates based on Provincial Government of Maluku (1992, p. II-5), Provincial Government of Maluku (1997, p.10, 79), Central Bureau of Statistics (BPS) (1997b).

TABLE VII.4 EIGHT CLUSTERS OF ISLANDS FOR RAPID ECONOMIC DEVELOPMENT

Cluster	*Islands in the cluster*
1	Morotai, Halmahera, Gebe, Ternate, Tidore, Kasiruta, Makian, Mandioli, Bacan, Bisa, Obi
2	Sulabesi, Mangole, Taliabu
3	Buru, Seram, Ambon, Lease Islands, Geser, Gorom, Manawoka Islands, Banda, Teon, Nila , Serua
4	Kei Islands, Kesui Islands
5	Aru Archipelago
6	Tanimbar Islands
7	Babar Islands, Sermata
8	Damar, Romang, Leti, Moa, Lakor, Kisar, Wetar

Source Provincial Government of Maluku (1997, p.11).

In 1995 there were eight domestically funded projects in Maluku, totalling 1756 billion rupiah, and five projects with international funding totalling US$245.7 million (Provincial Government of Maluku 1997, p. 81).

TOURISM INFRASTRUCTURE

Tourism attractions

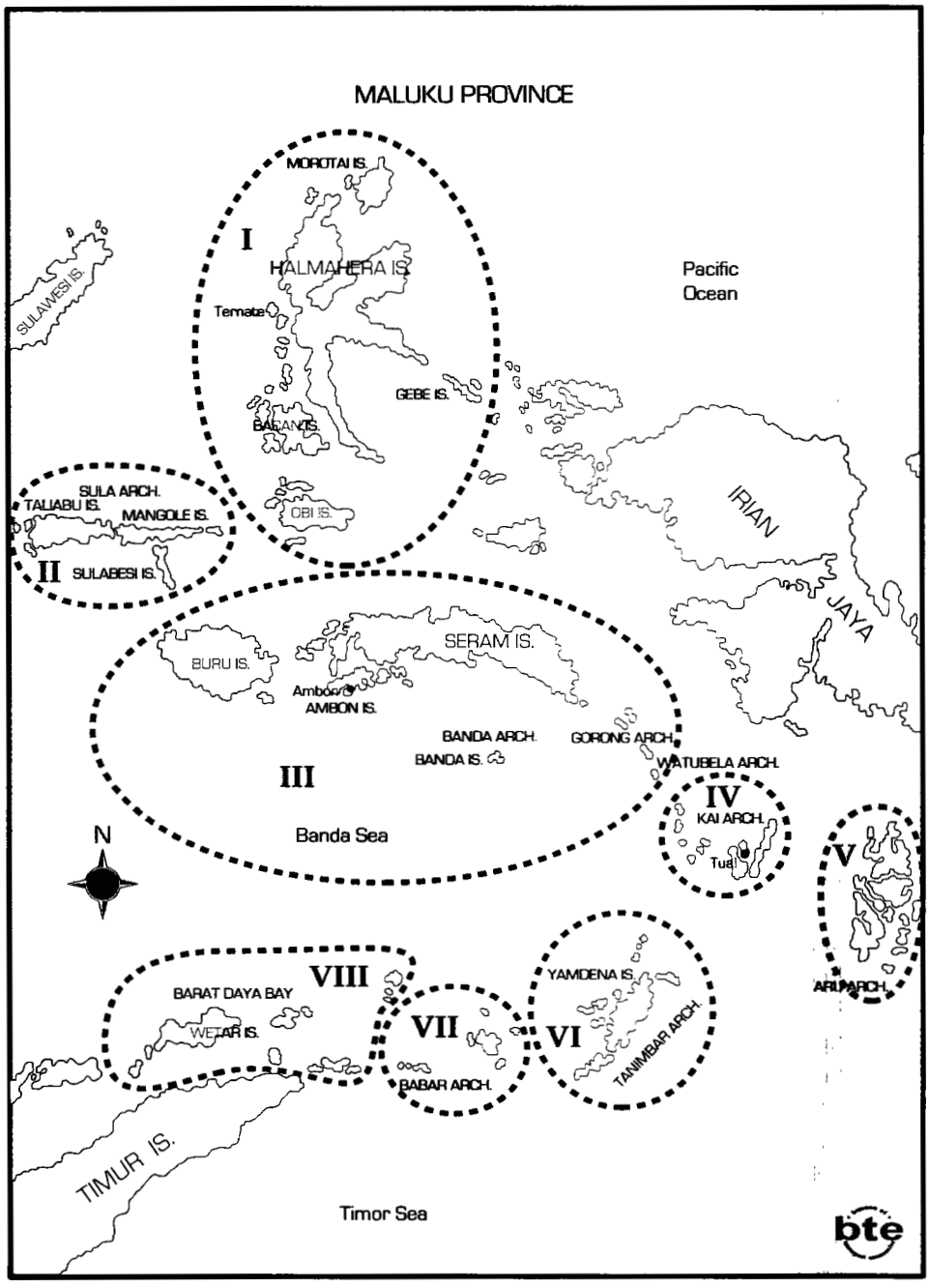
There are a large number of tourism attractions in Maluku and these are listed in Table VII.5. However, there was very little information available to the study team that would allow any ranking of the attractions in terms of attractiveness, accessibility and number of tourists that can be accommodated.

The main focuses of tourism in Maluku are the sea parks, especially in the Banda Islands in the south-east of the province, and natural attractions. Cultural and historic attractions are also major drawcards for tourists.

Australia is involved in Maluku tourism through the Darwin to Ambon yacht race held every July. In 1996, 77 yachts took part.

Historic attractions include forts and other buildings from the early days of Portuguese and Dutch colonisation of the region and historic sites from the Second World War. Many Australian ex-servicemen and their families return to Maluku to visit the sites of battles and war cemeteries.

FIGURE VII.1 MALUKU DEVELOPMENT CLUSTERS, 1997



Source Provincial Government of Maluku 1997, p. 11.

TABLE VII.5 LIST OF TOURISM ATTRACTIONS IN MALUKU

No.	Tourist attraction	Location	District
Beach			
1	Amahusu	Amahusa	Ambon Municipality
2	Batu Capeo	Amahusa	Ambon Municipality
3	Halong	Halong	Ambon Municipality
4	Manuala	Hila	Central Maluku
5	Namalatu	Latuhalat	Ambon Municipality
6	Natsepa	Suli	Central Maluku
7	Pintu Kota	Air Louw	Central Maluku
8	Serbat	Tual	South-east Maluku
9	Sulamadaha	Ternate	North Maluku
Sea parks			
1	Amahusu	Amahusa	Ambon Municipality
2	Banda	Banda Neira	Central Maluku
3	Batu Capeo	Nusa Ina (Seram)	Central Maluku
4	Cobo	Ternate/Tidore	North Maluku
5	Daruba	Daruba	North Maluku
6	Eri	Ambon (Nusa Ina)	Central Maluku
7	Hative Besar	Ambon	Ambon Municipality
8	Hila	Ambon (Nusa Ina)	Central Maluku
9	Latuhalat	Ambon	Ambon Municipality
10	Malole	Banda	Central Maluku
11	Marsegu	Seram	Central Maluku
12	Namalatu	Ambon (Nusa Ina)	Ambon Municipality
13	Namulu	Banda	Central Maluku
14	Natsepa	Suli	Central Maluku
15	Pasir Lamo	Ternate/Tidore	North Maluku
16	Pasir Raja	Ternate/Tidore	North Maluku
17	P. Anggarmese	Tanimbar	South-east Maluku
18	Astubun	Aru	South-east Maluku
19	Kasa	Seram	Central Maluku
20	P. Mare	Ternate/Tidore	North Maluku
21	P. Pombo	Nusa Ina	Central Maluku
22	P. Selu	Tanimbar	South-east Maluku
23	Tita Lama	Banda	Central Maluku
24	Tobelo	Tobelo	North Maluku
25	Toisapu	Ambon (Nusa Ina)	Central Maluku
26	Wayame	Ambon	Central Maluku

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TABLE VII.5 LIST OF TOURISM ATTRACTIONS IN MALUKU (continued)

No.	*Tourist attraction*	*Location*	*District*
Maritime			
1	Selat Capalulu	Tailahu Timur	North Maluku
2	Tg. BT. Komeng	Latuhalat	Ambon Municipality
3	Tg. Metafons	Rumah Tiga	Ambon Municipality
4	Tg. Setan	Mamala/Morela	Central Maluku
Fort			
1	Amsterdam	Hila	Central Maluku
2	Belgica	Banda Neira	Central Maluku
3	Beverwijk	Saparua	Central Maluku
4	Delest	Wonreli	South-east Maluku
5	Duurstede	Saparua	Central Maluku
6	Bp. Foort Gamakonora	Ibu	North Maluku
7	Holandia	Banda Neira	Central Maluku
8	Santo pedro	Ternate	North Maluku
9	Malamo	Ternate	North Maluku
10	Nassau	Banda Neira	Central Maluku
11	Oranye	Ternate	North Maluku
12	Titaley	Amahay	Central Maluku
13	Victoria	Ambon	Ambon Municipality
Historic			
1	Makam Australia	Tantui	Ambon Municipality
2	Museum Belang	Tual	South-east Maluku
3	Museum Budaya	Banda Neira	Central Maluku
4	Museum Siwa Lima	Amahusa	Ambon Municipality
5	Piramida	Wonreli	South-east Maluku
6	Rumah Bung Hatta	Banda Neira	Central Maluku
7	Rumah Dr. Tjipto M	Banda Neira	Central Maluku
8	Rumah St. Syahir	Banda Neira	Central Maluku
9	Tugu Chr. M. Tiahau	Karang Panjang	Ambon Municipality
10	Tugu Dolan	Kudmati	Ambon Municipality
11	Tugu Patimura	Uritetu	Ambon Municipality
12	Tugu Slamet Riyadi	Uritetu	Ambon Municipality
13	Tugu Trikora	Urimesing	Ambon Municipality
Palace			
1	Gereja Tua Banda	Banda Neira	Central Maluku
2	Gereja Tua Hila	Hila	Central Maluku

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TABLE VII.5 LIST OF TOURISM ATTRACTIONS IN MALUKU (continued)

No.	*Tourist attraction*	*Location*	*District*
3	Gereja Hutumuri	Huumuri	Ambon Municipality
4	Istana Mini	Banda Neira	Central Maluku
5	Kedaton St. Ternate	Ternate	North Maluku
6	Kuburan St. Babullah	Ternate	North Maluku
7	Mesjid St. Ternate	Ternate	North Maluku
8	Mesjid Tua Kaitetu	Kaitetu	Central Maluku
Nature			
1	Air Terjun Rumakai	Kairatu	Central Maluku
2	Cengkih Avo	Ternate	North Maluku
3	Dusun Wisata	Karang Panjang	Ambon Municipality
4	Kolan Waiselaka	Waai	Central Maluku
5	Taman Eva	Ternate	North Maluku
6	Air Terjun Goal	Jailolo	Halteng
7	Air Terjun Akeruba-ruba	Payahe	Halteng
8	Air Terjun Kairatu	Seram	Central Maluku
9	Air Terjun Naku	Naku	Ambon Municipality
10	Air Terjun	Wayame	Ambon Municipality
11	Sumber Air Panas Kalimede	Gunung Mamuya	Galela (Halteng)
12	Sumber Air Panas Akesahu	P. Tidore	Halteng
13	Sumber Air Panas Tobololo	Ternate	North Maluku
14	Sumber Air Panas Tulehu	Tulehu	Central Maluku
15	Sumber Air Panas Negeri Oma	P. Haruku	Central Maluku
16	Sumber Air Panas Pantai Sila	P. Nusalaut	Central Maluku
Conservation regions			
1	Cagar Alam Taman Laut P. Bombo	P. Bombo	Central Maluku
2	Cagar Alam Taman Laut Banda	P. Banda	Central Maluku
3	Cagar Alam Laut Kep. Aru Bagian Tenggara	Kep. Aru	South-east Maluku
4	Taman Nasional Manusela	P. Seram	Central Maluku

Source Ministry of Communications Maluku Regional Office (1997).

Passenger transport infrastructure

Air transport

Air transport is very important in Maluku because of the large distances between islands. Ambon and Ternate are the major hub airports in Maluku. Table VII.6 indicates the location and capability of Maluku's airports.

Pattimura airport at Ambon is the only first-class airport in Maluku. Its runway is planned to be extended to allow B737 aircraft to operate and a new terminal is currently under construction.

There are six airports classified as either third-or fourth-class. In addition there are around 20 other airstrips and private facilities.

There is an extensive network of air routes throughout the province. On the major routes linking Ambon and Ternate to the rest of Indonesia, there was at least one flight per day in 1997. On other routes within the province, the time/table frequency is much lower, being one to three per week. In practice, 30 to 40 per cent of the flights are delayed (Provincial Government of Maluku 1992, p. II–13).

Tourists wishing to visit attractions on islands other than Ambon may have to wait a few days for a scheduled flight and then it may not operate at the time, or on the day expected.

Road transport

The type of surface and condition of the roads in Maluku are shown in Table VII.7. Less than half of the road network (44 per cent) is surfaced with asphalt. Only about one-third of the road system is described as being in good condition and 44 per cent is described as damaged or badly damaged.

Roads were developed mainly to connect villages. Because villages are mostly located on the coast, the roads also mostly follow the coast. Travel to inland areas on the larger islands can be difficult (Provincial Government of Maluku 1997, p. 44).

Sea transport

Maluku is very dependent on sea transport because of the large number of islands in the province. Maluku's 85 ports are a reflection of this dependence. Of the 85 ports, 35 are single-product ports, and are normally not used for passengers. In addition to the ports, there are 53 jetties in the province (Provincial Government of Maluku 1997, p. 56). Table VII.8 provides information on the dimensions of berths at the major ports.

TABLE VII.6 AIRPORT INFRASTRUCTURE IN MALUKU

No.	Airport	Max size aircraft	Infrastructure dimension		Class	Development plan
1	Pattimura (AMQ) Ambon	F 100	R/W T/W Apron Terminal	1850 x 45 2 (105 x 23) 378.5 x 90 2624 m^2	I	R/W length 2500 m
2	Babullah (TTE) Ternate	F 27 HS 748	R/W T/W Apron Terminal	1420 x 30 75 x 23 80 x 60 363 m^2	III	R/W length 1700 m
3	Gamar Malamo (GLX) Galela	C 212	R/W T/W Apron Terminal	750 x 23 75 15 60 x 40 100 m^2	IV	R/W length 900 m
4	Ollilit (SXK) Saumlaki	C 212	R/W T/W Apron Terminal	900 x 23 75 x 15 60 x 40 100 m^2	Airstrip	
5	Amahai (AHI) Seram	C 212	R/W T/W Apron Terminal	900 x 23 75 x 23 60 x 40 100 m^2	Airstrip	R/W length 1400 m
6	Kuabang (KAZ) Kao	C 212	R/W T/W Apron Terminal	900 x 23 75 x 15 60 x 40 50m^2	IV	

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TABLE VII.6 AIRPORT INFRASTRUCTURE IN MALUKU (continued)

No.	*Airport*	*Max size aircraft*	*Infrastructure dimension*		*Class*	*Development plan*
7	Usman Sidik (LAH) Labuha	C 212	R/W	850 x 23	IV	
			T/W	75 x 15		
			Apron	60 x 40		
			Terminal	100 m^2		
8	Namlea (NAM) Buru	C 212	R/W	750 x 23		
			T/W	75 x 40		
			Apron	60 x 40		
			Terminal	100 m^2		
9	Namrole (NRE) Buru	C 212	R/W	800 x 23		
			T/W	80 x 15		
			Apron	60 x 40		
10	Bandanaira (NDA) Banda	C 212	R/W	700 x 30	IV	
			T/W	75 x 15		
			Apron	60 x 40		
			Terminal	200 m^2		
11	Dobo (DOB)	C 212	R/W	750 x 23		
			T/W	75 x 15		
			Apron	60 x 40		

Source Ministry of Communications Maluku Regional Office (1997), Provincial Government of Maluku (1997), Ministry of Communications, Directorate of Air Transport pers. comm. 1998.

TABLE VII.7 ROAD SURFACE AND CONDITION—MALUKU, 1996

(km)

	State	Province	Regency	Municipality	Total
Type of surface					
-asphalt	437	1 744	1 700	266	4 147
-gravel	330	315	567	29	1 241
-earth	8	224	1 500	52	1 784
-others	0	196	1 923	68	2 187
Total	775	2 479	5 690	415	9 359
Road condition					
-good	437	1 082	1 173	379	3 071
-moderate	330	1 086	698	14	2 128
-damaged	8	311	1 034	14	1 367
-badly damaged	0	0	2 785	8	2 793
Total	775	2479	5 690	415	9 359

Source Central Bureau of Statistics (BPS) (1997a).

TABLE VII.8 BERTH DIMENSIONS AT MAJOR MALUKU PORTS

Berth	Length (m)	Location
Ambon	776	Kota Ambon
Ternate	307	Kab Malut
Tual	115	Kab Malra
Banda	92	Kab Malteng
Amahai	68	Kab Malteng
Tobelo	220	Kab Malut
Dobo	113	Kab Malra
Saumlaki	100	Kab Malra
Tulehu	50+2x50	Kab Malteng
Soasiu	50	Kab Halteng
Buli	16	Kab Halteng
Daruba	60	Kab Malut
Wonreli	60	Kab Malut

Source Ministry of Communications Maluku Regional Office (1997).

TRANSPORT SERVICES

An extensive network of air and sea transport routes services Maluku. Many of the routes have low patronage and require government subsidies. The routes attracting subsidies are referred to as pioneer routes.

Air transport services

Ternate and Ambon are major hubs for Maluku's air transport services. The major links to other provinces are through Ambon. Ternate links the northern part of Maluku to Sulawesi Utara through Manado. The major routes and frequencies are shown in Table VII.9. Some of the important tourist attractions (for example, Banda Islands) have few air services per week.

TABLE VII.9 DOMESTIC AIR ROUTES AND SERVICE FREQUENCY IN MALUKU, 1996

No.	*Route*	*Flights per week*	*Aircraft type*	*Operator*
Regular routes				
1	Ambon-Ujung Pandung-Jakarta	7	F28	Merpati
2	Ambon-Ujung Pandung-Denpasar-Jakarta	7	F28	Merpati
3	Ambon-Ujung Pandung-Surabaya-Jakarta	3	F28	Merpati
4	Ambon-Ujung Pandung-Surabaya-Jakarta	7	B737	Mandala
5	Ambon-Surabaya-Jakarta	7	F100	Sempati
6	Ambon-Sorong	7	F28	Merpati
7	Ambon-Sorong-Biak-Timika-Jayapura	4	F28	Merpati
8	Ambon-Timika-Merauke	3	F28	Merpati
9	Ambon-Langgur-Dobo-Langgur-Dobo	2	C212	Merpati
10	Ambon-Langgur-Ambon	4	F27	Merpati
11	Ambon-Banda-Ambon	2	C212	Merpati
12	Ambon-Wahai-Ambon	1	C212	Merpati
13	Ambon-Namlea-Ambon	1	C212	Merpati
14	Ambon-Sanana-Labuha-Ternate	2	C212	Merpati
15	Ambon-Mangole-Ambon	2	C212	Merpati

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TABLE VII.9 DOMESTIC AIR ROUTES AND SERVICE FREQUENCY IN MALUKU, 1996 (continued)

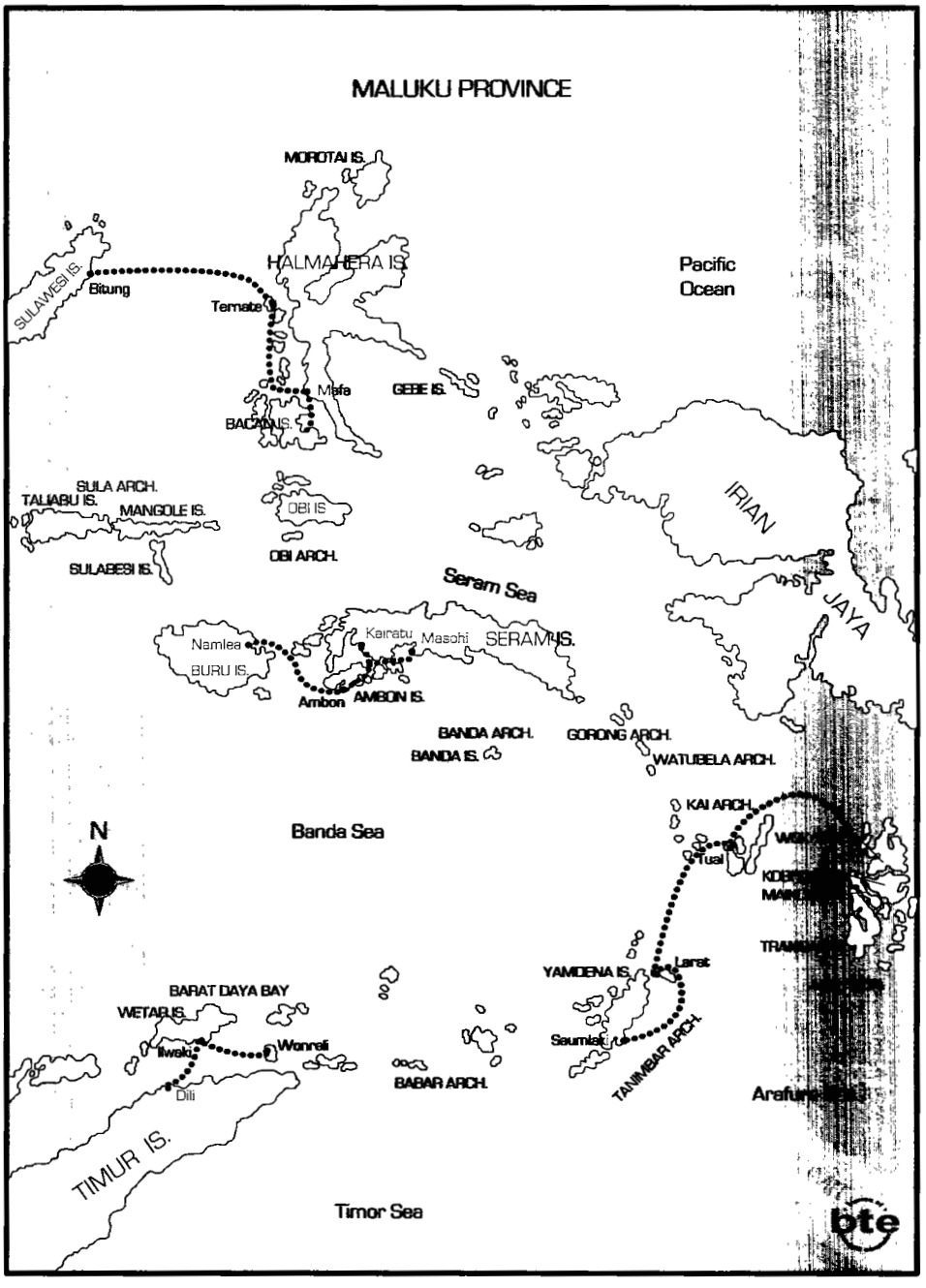
No.	Route	Flights per week	Aircraft type	Operator
16	Ambon–Ternate–Ambon	7	F27	Merpati
17	Ternate–Sanana–Labuha–Ambon	2	C212	Merpati
18	Ternate–Kao–Morotai–Kao	1	C212	Merpati
9	Ternate–Galela–Ternate	3	C212	Merpati
20	Ternate–Manado–Ternate	7	C212	Merpati
21	Ternate–Manado–Ternate	3	F27	Merpati
22	Ternate–Gebe–Ternate	3	C212	Merpati
23	Manado–Mangole–Manado	2	C212	Merpati
Pioneer routes				
24	Ambon–Saumlaki–Ambon	3	C212	Merpati
25	Ambon–Saumlaki–Larat–Tual	1	C212	Merpati
26	Ambon–Kisar–Ambon	1	C212	Merpati
27	Ambon–Amahi–Banda–Amahi–Ambon	2	C212	Merpati
28	Ambon–Namrole–Ambon	2	C212	Merpati
29	Ambon–Kisar–Ambon	na	C212	na
30	Tual–Dobo–Tual	na	C212	na
31	Ternate–Buli–Ternate	na	C212	na

Source Maluku Provincial Office of the Ministry of Communications pers. comm. Dec. 1997.

Sea transport

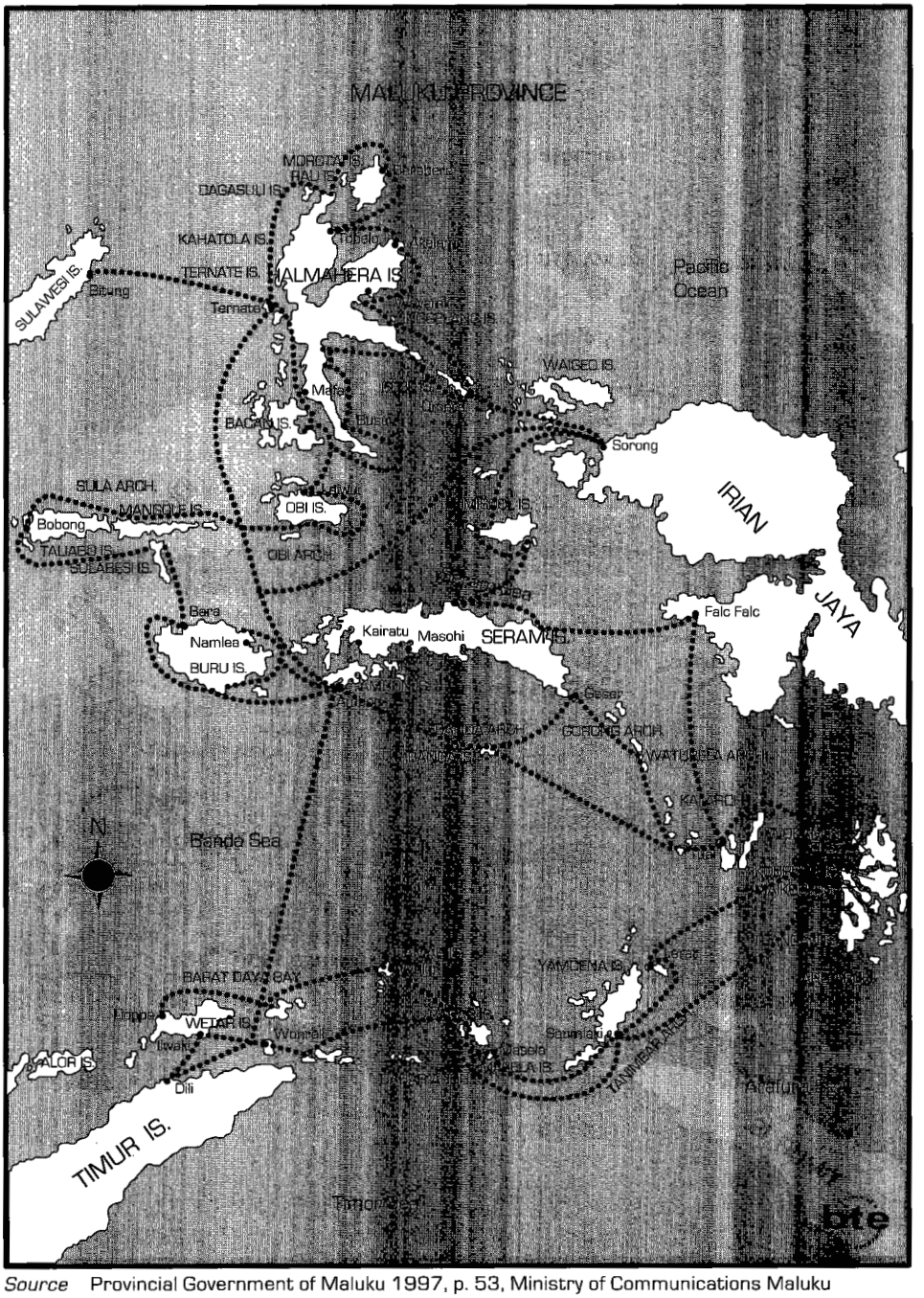
The extensive network of ferry and pioneer services is shown in Figure VII.2 and Figure VII.3. The Pelni routes that service Maluku ports are shown in Figure VII.4 and documented with frequencies in Appendix I; the routes also appear in this appendix because of the importance of sea transport to the province. Service frequency for ferry routes is shown in Table VII.10. In addition to the routes illustrated in this appendix, there are some private services for which no data were available. For example, Elsafa operates a fast ferry service between Ambon and Seram Island (Provincial Government of Maluku 1997, p. 54) and the *Sorana Express* provides a service for tourists to Banda with a frequency responding to demand. The *Sorana Express* has a capacity of 50 passengers and travels at 15 knots.

FIGURE VII.2 FERRY ROUTES IN MALUKU, 1996



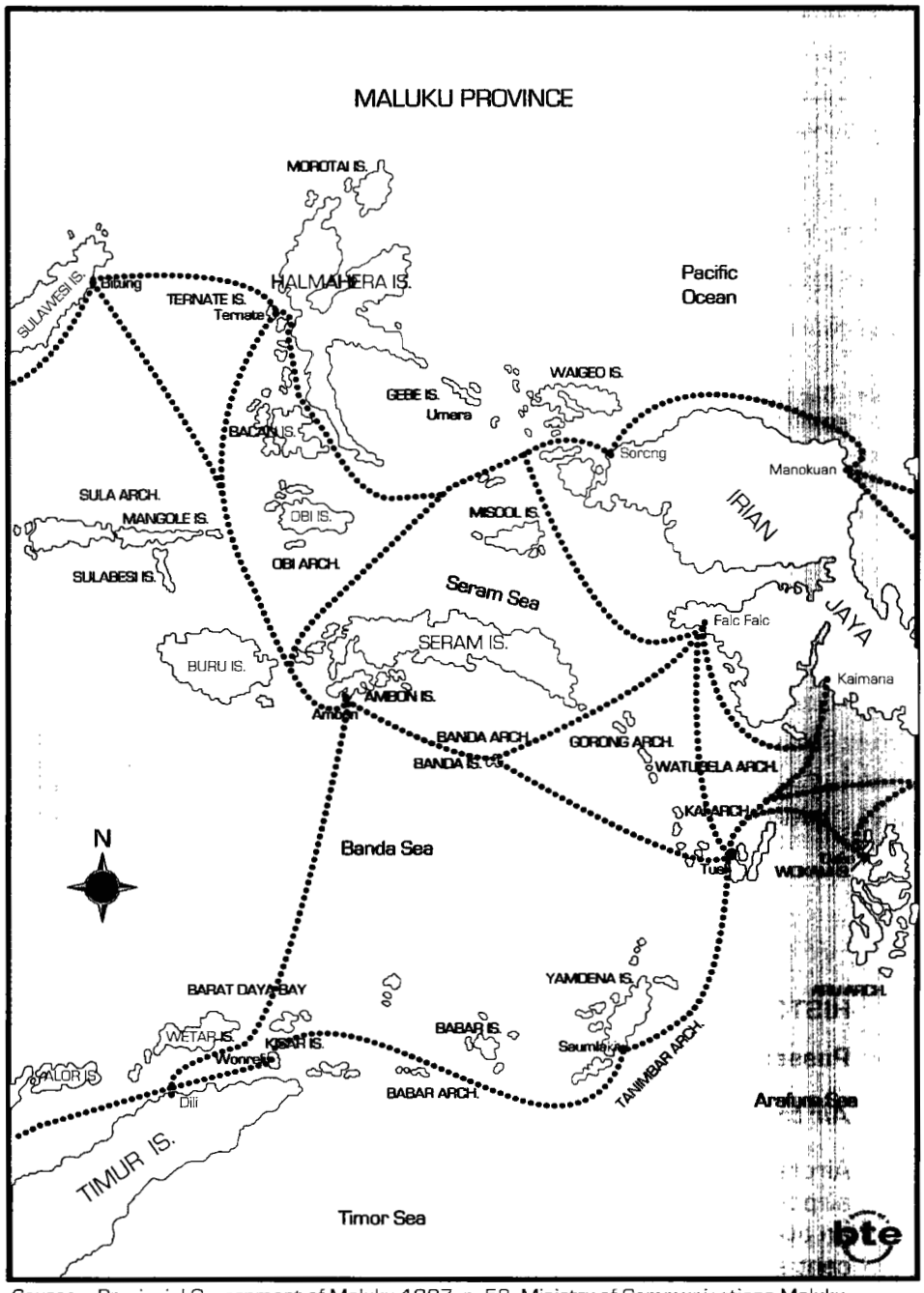
Source Provincial Government of Maluku 1997, p. 53, Ministry of Communications Maluku Regional Office pers. comm. Dec. 1997.

FIGURE VII.3 PIONEER SHIPPING ROUTES IN MALUKU, 1996



Source Provincial Government of Maluku 1997, p. 53, Ministry of Communications Maluku Regional Office pers. comm. Dec. 1997.

FIGURE VII.4 PELNI ROUTES IN MALUKU, 1996



Source Provincial Government of Maluku 1997. p. 53, Ministry of Communications Maluku Regional Office pers. comm. Dec. 1997.

TABLE VII.10 MALUKU FERRY ROUTES AND SERVICE FREQUENCY

Route	*Frequency*	*Operator*	*Passenger capacity*	*Vessel name*	*Vessel GRT*
Poka–Galala	5–10 mins	ASDP	515	Sepat	111
				Gabus	142
				Tenggiri	
Hunimua–Waipirit	2–3 hrs	ASDP	837	Terubuk	300
				Masnait	
				Kineret	
Galala–Namlea	Daily	ASDP	350	Danau Rana	
				Kerapu II	
Ambon–Sanana–Dofa–Ternate–Bitung	Weekly	PT. Sumber Rejeki	100	Nusa Teratai	
Ambon–Sanana–Dofa–Ternate–Bitung	Weekly	PT. Samudera Pertiwi	100	Cahaya Bahari	
Ambon–Leksula	Weekly	PT. Sumber Rejeki	100	Simpati	
	Weekly	Putra Maluku	100	Amboina	
Ambon–Wahai	Weekly	Berlian	100	Wahai Star	
Ambon–Namlea	Weekly	Berlian	100	Namlea Star	
Ambon–Geser–Gorom	Weekly	Cahaya P	100	Purnama	
Ambon–Leksula	Weekly	Putra Maluku	100	Bahagi–Abadi	
Ambon–Banda	Weekly	PT. Sumber Rejeki		Waisama	

Source Ministry of Communications Maluku Regional Office (1997).

HISTORIC DEMAND

Passenger transport

Air transport

Aircraft movements and passenger numbers at Ambon and Ternate airports are illustrated in Table VII.11. Passenger numbers grew at an average annual rate of 12 per cent at Ambon and almost 9 per cent at Ternate. There are a few international aircraft movements at Ambon. From August 1996 to the end of July 1997 there were 59 international aircraft movements carrying 550 passengers that used the Ambon Pattimura airport.

TABLE VII.11 AIRCRAFT MOVEMENTS AND PASSENGERS AT AMBON AND TERNATE, 1992-1997

	Aircraft		*Passengers*		
Year	*Arrival*	*Departures*	*Arrivals*	*Departures*	*Transit*
Ambon					
1992	3 804	3 804	70 632	58 681	32 397
1993	4 393	4 389	80 241	71 725	35 087
1994	4 552	4 545	94 416	86 092	33 401
1995	4 684	4 684	102 628	98 648	34 761
8/96-7/97	4 895	4 898	111 749	119 430	54 003
Ternate					
1992	1 544	1 533	24 590	23 480	2 530
1993	1 796	1 788	28 076	25 684	1 265
1994	1 706	1 705	29 295	27 033	1 272
1995	1 841	1 838	31 708	32 211	1 501

Source Provincial Government of Maluku (1997, p. 49), Pattimura Airport pers. comm. Dec. 1997.

Sea transport

Passenger demand for sea transport is shown in Table VII.12 and Table VII.13. The official figures for Perintis ships almost certainly understate the actual numbers. During the field trip the project team was told by three independent sources that as a general rule Perintis ships servicing the south-eastern parts of the province were grossly overloaded. Some were claimed to have standing room only. The project team was not able to verify these claims, but the fact that they were made by three separate sources suggests there is some truth in them.

Cruise ships regularly visit Maluku. Ambon and Banda are the main ports visited.

Tourism demand

As for most of the provinces in Eastern Indonesia, the number of domestic tourists in Maluku exceeds the number of international tourists. The number of international tourists grew rapidly from 1993 to 1996. In 1997 the number fell substantially. The estimated number of tourists was 35 per cent less than in 1996. The estimate was prorated from figures from January to September. This estimation procedure will almost certainly overstate the total number of tourists

TABLE VII.12 SHIP CALLS AND PASSENGER NUMBERS AT AMBON, TERNATE AND BANDA, 1990–1994

	1990	*1991*	*1992*	*1993*	*1994*
Ambon					
Ship calls	2 274	4 145	3 687	4 471	4 394
GRT	5 175 317	8 512 984	3 310 235	3 558 314	2 296 869
Pass. boarding	124 605	168 408	179 985	160 384	213 589
Pass. disembarking	137 133	145 292	140 917	158 068	171 162
Ternate					
Ship calls	2 615	4 450	3 490	1 503	3 093
GRT	3 090 109	748 047	2 583 895	1 411 421	4 342 604
Pass. boarding	106 435	115 591	125 402	44 568	133 098
Pass. disembarking	114 653	120 609	122 635	51 236	122 376
Banda					
Ship calls			438	599	490
GRT			119 740	246 249	543 719
Pass. boarding			6 302	6 417	13 196
Pass. disembarking			7 012	7 012	13 200

Source Provincial Government of Maluku (1997, p. 55).

TABLE VII. 13 SEA TRANSPORT PASSENGER STATISTICS FOR AMBON, 1994–1996

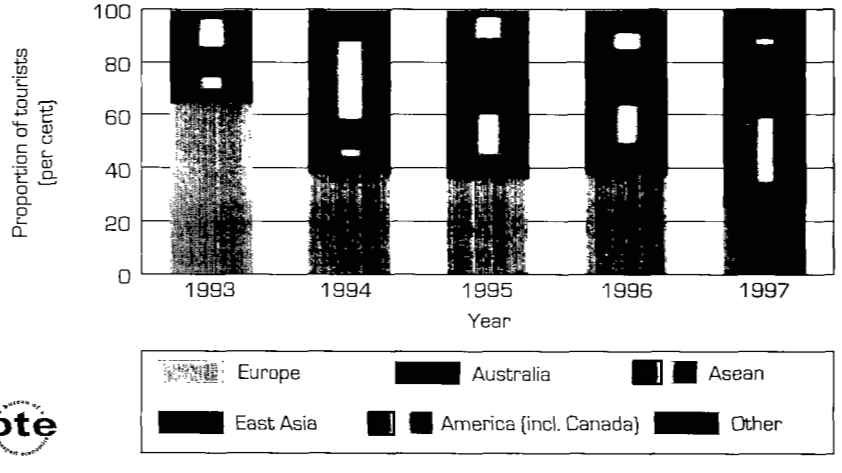
	1994	*1995*	*1996*
Perintis			
Ship calls	133	121	128
GRT	102 101	102 382	104 646
Pass. boarding	9 875	6 425	12 738
Pass. disembarking	6 877	3 918	11 409
Rakyat (People's ships)			
Ship calls	1 470	866	983
GRT	48 779	26 328	39 456
Pass. boarding	16 617	15 055	11 287
Pass. disembarking	14 086	11 794	10 850
Local			
Ship calls	1 501	1 389	1 269
GRT	378 570	365 181	357 338
Pass. boarding	57 709	59 055	58 504
Pass. disembarking	41 686	45 681	44 955

Source Ambon Port Administration pers. comm. Dec. 1997.

because tourist numbers were severely affected by the closure of Ambon airport for three weeks during October 1997 due to smoke haze from forest fires in Kalimantan.

It is clear from Figure VII.5 that the proportion of foreign tourists from Europe has declined since 1993. In 1993, 65 per cent of foreign tourists came from Europe; by 1997 the proportion had declined to 26 per cent. During the same period of time the proportion from ASEAN countries increased from 4.5 per cent to 24 per cent, and the proportion from east Asia increased from 11 per cent to 28 per cent. Therefore in 1997 over half of all foreign tourists to Maluku came from Asian countries. The proportion from Australia and New Zealand also increased by a less dramatic amount, rising from 5.6 per cent in 1993 to 9.4 per cent in 1997.

FIGURE VII.5 ORIGIN OF FOREIGN TOURISTS VISITING MALUKU, 1993–1997



Source Provincial Government of Maluku 1997, p. 135, Maluku Regional Office of the Department of Tourism, Post and Telecommunications pers. comm. Dec. 1997.

FUTURE TOURISM DEMAND

Future tourist numbers are set as targets rather than as a forecast based on econometric or time-series analysis. The targets shown in Table VII.15 represent a 15 per cent annual growth rate based on the 1994 actual number of tourists, as shown in Table VII.14. There were no forecasts or targets for domestic tourists made available to the study team. However, if past trends continue into the future, the number of domestic tourists in 2005 would be around 40 000.

TABLE VII.14 INTERNATIONAL AND DOMESTIC TOURISTS VISITING MALUKU, 1989–1997

	1989	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*[a]
International									
Europe					3 584	4 362	4 469	5 410	2 389
Aust/NZ					312	748	1 122	1 703	881
ASEAN					248	310	1 886	2 051	2 271
East Asia					632	1 329	3 536	3 041	2 585
USA/Canada					585	3 342	960	861	192
Others					192	1 354	361	1 261	1 033
Total	5 220	5 265	5 266	5 484	5 553	11 445	12 334	14 327	9 352
Domestic	4 504	8 965	9 474	16 009	11 703	13 288	20 083	21 765	

a. 1997 figures are estimates based on data for the period January to September.

Sources Provincial Government of Maluku (1997, p.135), Maluku Regional Office of the Department of Tourism, Post and Telecommunications pers. comm. Dec. 1997.

TABLE VII.15 TARGETS FOR INTERNATIONAL TOURIST NUMBERS IN MALUKU

Year	*Tourists*[a]
1996	14 333
1997	16 482
1998	18 963
1999	21 796
2000	25 066
2001	28 826
2002	33 148
2003	38 121
2004	43 838
2005	50 401

a. 1996 figure is the actual number of tourists. Figures for 1997 to 2005 are targets.

Source Maluku Regional Office of the Department of Tourism, Post and Telecommunications pers. comm. Dec. 1997.

PLANNED DEVELOPMENTS

Marine tourism is the main development target for tourism in Maluku. In support of marine tourism, the provincial government is promoting the need to protect the coral to ensure the attractiveness of the reefs is maintained. The project team was told that local villagers had often used coral as a house-building material. The marine tourism image is supported by regular events such as the Maluku Maritime Festival (held every two years) and the annual Darwin to Ambon yacht race.

The priority order for tourism development is as follows:

1. Banda Islands
2. Ambon and surrounding areas
3. Seram Island
4. Ternate
5. Kur and Tanimbar islands

Pattimura airport at Ambon is presently being expanded. The runway is to be extended to 2500 metres and a new terminal building is under construction. The new terminal will replace the current one, which is nearing capacity, and in its present location constrains future airport development. The new terminal and longer runway will allow larger aircraft up to A300 to use the airport regularly. Future expansion plans allow for a parallel taxiway and an expanded apron.

DEVELOPMENT ISSUES/PROBLEMS

Access to the Banda Islands is difficult. Many international tourists use sea transport. Travel time by sea is about one day, the service frequency was described as irregular, and arranging return travel can be difficult. Travel by air takes about one hour with only a few flights per week. International tourists on a tight time budget would have difficulty arranging a trip to Banda with any certainty. Unfortunately, it is difficult to expand the airport at Banda because of mountainous terrain near the airport.

Tourism in Banda and other parts of south-eastern Maluku is constrained by the limited capacity of shipping services. Although air services are also limited, more detailed demand analysis would be required before expansion of aviation infrastructure could be considered.

APPENDIX VIII

IRIAN JAYA

INTRODUCTION

Geography and administration

Irian Jaya is the easternmost province of Indonesia. It is approximately 421 981 square kilometres in area (Central Bureau of Statistics (BPS) 1998). To the north of Irian Jaya is the Pacific Ocean, to the west is the province of Maluku, to the south is the Arafura Sea, and Papua New Guinea borders Irian Jaya in the east.

Irian Jaya consists of one municipality, eight regencies and one administration city. These are listed below.

- Jayapura Municipality (capital city of Irian Jaya)
- Merauke Regency
- Jayawijaya Regency
- Pania Regency
- Fak-Fak Regency
- Sorong Regency
- Manokwari Regency
- Yapen Waropen Regency
- Jayapura Regency
- Biak Numfor Administrative City

Irian Jaya has considerable variety in its topography. It is predominantly mountainous with steep slopes, vast low plains and many rivers. Some of the mountains are snow-covered.

Population

The population in 1995 was estimated to be 1 942 600, giving a population density of five persons per square kilometre. The average growth rate of the population between 1980 and 1990 was 3.46 per cent. Over 80 per cent of the population follow the Christian religion (Central Bureau of Statistics (BPS) 1998).

Economy

Table VIII.1 illustrates the GRDP of Irian Jaya. Mining followed by agriculture are the top sectors.

TABLE VIII.1 GRDP OF IRIAN JAYA

No.	Sector	Year (Rp million)[a] 1993	1994	1995	1996
1	Agriculture	973 233	1 050 949	1 136 280	1 219 041
2	Mining and quarrying	2 219 692	2 395 000	3 183 953	3 713 130
3	Manufacturing industries	207 315	224 484	325 168	375 573
4	Electricity, gas and water supply	14 140	15 076	16 877	18 649
5	Construction	407 025	432 506	486 410	535 285
6	Trade, restaurants and hotels	249 043	266 328	284 916	304 420
7	Transport and communication	191 053	203 592	219 851	242 239
8	Finance, rent of buildings and business services	104 889	111 736	120 628	133 482
9	Services	379 349	403 648	426 418	444 991
Total		4 745 739	5 103 319	6 200 501	6 986 810

a. constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TOURISM INFRASTRUCTURE

Tourism attractions

There are a large number of tourist attractions in Irian Jaya. These are comprehensively detailed in the tourism master plan developed by the Department of Tourism, Post and Telecommunications (1991). In Table VIII.2 this information is summarised by listing the number and type of tourist attraction in each regency.

TABLE VIII.2 NUMBER AND TYPE OF TOURIST ATTRACTIONS BY REGENCY IN IRIAN JAYA

Regency	*Natural*	*Cultural*	*Historic*
Merauke	9	4	3
Jayawijaya	5	6	-
Jayapura	12	2	4
Paniai	10	1	-
Fak-Fak	13	2	1
Sorong	23	-	-
Manokwari	14	-	3
Waropen	9	5	1
Biak	21	1	3

Source Department of Tourism, Post and Telecommunications (1991).

Airport infrastructure

TABLE VIII.3 IRIAN JAYA AIRPORT INFRASTRUCTURE

No.	Airport and code	Max size aircraft	Infrastructure dimension (m)		Class
1	Frans Kaisiepo Biak (BIK)	B 747	R/W T/W Apron Terminal	3 570 x 45 148 x 25, 105 x 30, 110 x 25 170 x 80 2 975 m^2	II
2	Sentani (DJJ) Jayapura	B 737	R/W T/W Apron Terminal	2 180 x 45 2 (200 x 23) 384 x 81 2 910 m^2	I
3	Jefman (SOQ) Sorong	F 28	R/W T/W Apron Terminal	1 850 x 30 2 (67 x 15) 140 x 45 1 470 m^2	II
4	Mopah (MKQ) Merauke	B 737	R/W T/W Apron Terminal	1 850 x 30 189 x 23 160 x 45 750m^2	II
5	Paniaai (NBX) Nabire	F 27	R/W T/W Apron Terminal	1 400 x 30 95 x 23 160 x 90 450m^2	II
6	Wamena (WMX) Jayawijaya	F 27	R/W T/W Apron Terminal	1 650 x 30 2(85 x 20) 100 x 50 749m^2	II
7	Rendani (MKW) Manokwari	F 27	R/W T/W Apron Terminal	1 650 x 30 2(85 x 15) 125 x 67.5 540m^2	III
8	Torea Fak Fak	DHC 6	R/W T/W Apron Terminal	630 x 23 85 x 23 750 x 80 325m^2	III
9	Utarom (KNG) Kaimana	F 27	R/W T/W Apron	1 600 x 30 80 x 20 100 x 50	
10	Tembaga Pura Timika (TIM)	B 737	R/W Apron	2209 x 45 67.5 x 60	I

Source Ministry of Communications Directorate of Air Transport pers. comm. July 1998.

Road transport infrastructure

TABLE VIII.4 ROAD LENGTH IN IRIAN JAYA BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

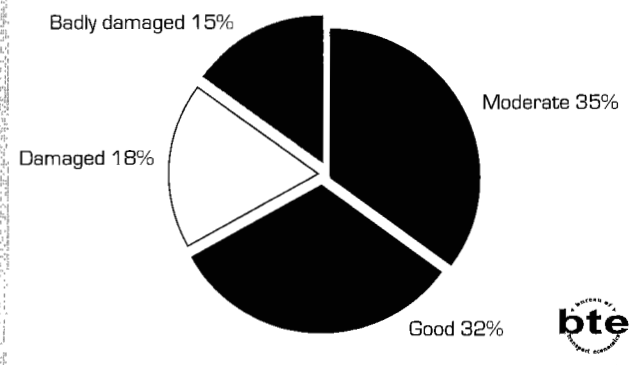
(km)

	State	*Province*	*Regency*[a]	*Municipality*	*Total*
1995					
Type of surface					
- asphalted	578	846	1 997	0	3 421
- gravel	617	547	2 588	0	3 752
- earth	294	605	2 598	0	3 497
- others	0	71	1 508	0	1 579
Total	1 489	2 069	8 691	0	12 249
Road condition					
- good	585	786	2 569	0	3 940
- moderate	904	1 283	2 102	0	4 289
- damaged	0	0	2 198	0	2 198
- badly damaged	0	0	1 822	0	1 822
Total	1 489	2 069	8 691	0	12 249
1996					
Type of surface					
- asphalted	585	913	2 094	0	3 592
- gravel	904	591	2 713	0	4 208
- earth	0	653	2 724	0	3 377
- others	0	77	1 580	0	1 657
Total	1 489	2 234	9 111	0	12 834
Road condition					
- good	585	849	2 693	0	4 127
- moderate	904	1 385	2 204	0	4 493
- damaged	0	0	2 304	0	2 304
- badly damaged	0	0	1 910	0	1 910
Total	1 489	2 234	9 111	0	12 834

a. Including Jayapura Municipality.

Source Central Bureau of Statistics (BPS) (1997a).

FIGURE VIII.1 IRIAN JAYA ROAD CONDITION, 1996



Source Table VIII.4.

Sea transport

There are 32 seaports in Irian Jaya. The largest ports are Biak (142 x 13 metres and 60 x 15 metres), Jayapura (132 x 9, 65 x 9, 33 x 6, 80 x 23 metres) and Sorong (160 x 22, 120 x 12 metres) (Irian Jaya Regional Office Ministry of Communications pers. comm. Dec. 1997).

TRANSPORT SERVICES

Air transport

TABLE VIII.5 DOMESTIC AIR ROUTES—IRIAN JAYA, 1996

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
1	Nabire–Muanamani	Merpati	DHT	3
	Nabire–Jayapura	Merpati	F27	5
	Nabire–Wamena	Merpati	DHT	1
	Nabire–Ilaga	Merpati	DHT	2
	Nabire–Mulia	Merpati	DHT	2
	Nabire–Ilu	Merpati	DHT	1
	Nabire–Kaimana	Merpati	DHT	4
	Nabire–Waghete	Merpati	DHT	2
	Nabire–Obalino	Merpati	DHT	3
	Nabire–Enarotali	Merpati	DHT	3

Continued on next page

TABLE VIII.5 DOMESTIC AIR ROUTES—IRIAN JAYA, 1996 (continued)

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
2	Sorong–Biak	Merpati	F27	3
	Sorong–Jayapura	Merpati	F27	2
	Sorong–Jayapura	Merpati	F28	3
	Sorong–Teminabuan	Merpati	DHT	2
	Sorong–Ayawasi	Merpati	DHT	2
	Sorong–Manado	Merpati	F27	2
	Sorong–Ambon	Merpati	F28	10
	Sorong–Tembagapura	Merpati	DHT	1
	Sorong–Fak-Fak	Merpati	DHT	4
	Sorong–Kambuaya	Merpati	DHT	2
3	Timika–Jayapura	Merpati	F27	7
4	Manokwari–Sorong	Merpati	F27	2
	Manokwari–Bogo	Merpati	DHT	3
	Manokwari–Merdey	Merpati	DHT	2
5	Biak–Sorong	Merpati	F28	3
	Biak–Sorong	Merpati	F27	2
	Biak–Ambon	Merpati	F28	4
	Biak–Ujung Pandang	Garuda	B737	3
	Biak–Ujung Pandang	Merpati	B737	5
	Biak–Nabire	Merpati	F27	1
	Biak–Nabire	Merpati	DHT	6
	Biak–Jayapura	Garuda	B737	2
	Biak–Jayapura	Merpati	F28	7
	Biak–Jayapura	Merpati	F27	3
	Biak–Tembagapura	Merpati	F28	4
	Biak–Manado	Merpati	F27	4
6	Fak-Fak–Biak	Merpati	DHT	1
	Fak-Fak–Tembagapura	Merpati	DHT	1
7	Merauke–Kaimana	Merpati	DHT	4
	Merauke–Ewer	Merpati	DHT	2
	Merauke–Mindiptanah	Merpati	DHT	1
8	Jayapura–Manokwari	Merpati	F27	1
	Jayapura–Jakarta	Merpati	F100	7
	Jayapura–Timika	Merpati	F100	7
	Jayapura–Wamena	Merpati	F27	14
	Jayapura–Tembagapura	Merpati	F28	4

Source Directorate General Air Communications (1997a).

Sea transport

The Pelni routes and frequencies are documented in Appendix I.

CURRENT AND HISTORIC DEMAND

Air transport

TABLE VIII.6 FRANS KAISEPO (BIAK) AIRPORT TRAFFIC STATISTICS, 1994–1997

	Aircraft		Passengers		
Year	Arrivals	Departures	Arrivals	Departures	Transit
1994	4 618	4 647	55 115	62 870	65 925
1995	4 258	4 264	59 627	66 324	66 753
1996	3 743	3 751	55 508	60 135	74 291
1997	4 182	4 184	64 232	68 872	84 449

Source Directorate of Air Transport (1998).

TABLE VIII.7 JEFFMAN (SORONG) AIRPORT TRAFFIC STATISTICS, 1994–1997

	Aircraft		Passengers		
Year	Arrivals	Departures	Arrivals	Departures	Transit
1994	2 378	2 349	28 050	40 217	16 478
1995	1 884	1 886	31 090	34 575	9 836
1996	1 653	1 640	38 879	44 267	14 568
1997	809	835	20 614	24 322	9 291

Source Directorate of Air Transport (1998).

TABLE VIII.8 SENTANI (JAYAPURA) AIRPORT TRAFFIC STATISTICS, 1993–1996

	Aircraft		Passengers		
Year	Arrivals	Departures	Arrivals	Departures	Transit
1993	9 105	9 072	103 144	116 176	1 703
1994	-	9 944	-	-	806
1995	12 274	12 221	144 038	166 006	1 987
1996	12 436	12 352	150 034	151 326	534

Source Irian Jaya Regional Office Ministry of Communications pers. comm. Dec. 1997.

Sea transport

TABLE VIII.9 IRIAN JAYA PORT TRAFFIC STATISTICS, 1993-1996

				Passengers	
Port	*Year*	*Ship calls*	*DWT*	*Embark*	*Disembark*
Biak	1993	1 007	2 305 072	40 659	42 528
	1994	1 195	2 673 869	83 869	71 638
	1995	1 176	2 254 019	87 491	72 669
	1996	1 302	1 175 703	71 260	59 303
Jayapura	1993	378	607 463	64 706	67 914
	1994	684	680 404	93 947	108 568
	1995	840	705 591	100 798	107 243
	1996	765	683 827	82 737	93 872
Sorong	1993	2 553	3 566 567	82 938	88 600
	1994	2 499	4 039 217	111 419	92 349
	1995	2 621	3 350 175	103 407	106 389
	1996	2 856	3 459 040	87 328	94 157

Source Irian Jaya Regional Office Ministry of Communications pers. comm. Dec. 1997.

Tourism demand

TABLE VIII.10 IRIAN JAYA VISITOR ARRIVALS BY REGENCY, 1989-1996

Regency	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
Jayapura	2 668	2 983	6 420	5 840	7 242	7 386	7 110	4 908
Biak	1 226	1 854	1 868	3 758	2 510	3 779	3 358	1 747
Manokwari	346	254	458	505	475	513	829	696
Fak-Fak	581	490	690	772	220	3 551	3 499	3 830
Merauke	171	178	421	270	782	1 495	1 515	1 224
Sorong	314	638	320	311	311	356	1 058	596
Nabire	150	127	185	201	234	275	328	203
Serui	154	105	177	195	174	216	198	123
Jayawijaya	1 830	2 615	3 326	4 574	2 894	2 386	4 171	2 817
Total	7 440	9 244	13 865	16 426	14 842	19 957	22 066	16 144

Source Regional Tourism Department Irian Jaya pers. comm. Dec. 1997.

APPENDIX IX

PROVINCES NOT VISITED

GENERAL DESCRIPTION OF THE PROVINCES

Geography

TABLE IX.1 NUSA TENGGARA BARAT—BASIC GEOGRAPHY

No.	*Item*	*Description*
1	Area of province (square km)	20 177
2	Position	8°10' - 9°5' south latitude and 115°46' - 119°5 east longitude
3	Regencies	6 regencies: Lombok Barat, Lombok Tengah, Lombok Timur, Sumbawa, Dompu, Bima
4	Municipalities	Mataram
5	Capital	Mataram

Source Directorate General Air Communications (1997a).

TABLE IX.2 KALIMANTAN BARAT—BASIC GEOGRAPHY

No.	*Item*	*Description*
1	Area of province (square km)	146 807
2	Position	2°8' north latitude - 3°5' south latitude and 108°30' - 114°10' east longitude
3	Regencies	6 regencies: Sambas, Pontianak, Sanggau, Ketapang, Sintang, Kapuas Hulu
4	Municipalities	Pontianak
5	Capital	Pontianak

Source Directorate General Air Communications (1997a).

TABLE IX.3 KALIMANTAN SELATAN—BASIC GEOGRAPHY

No.	*Item*	*Description*
1	Area of province (square km)	36 986
2	Position	114°19' – 116°33' south latitude and 1°21' – 4°10' east longitude
3	Regencies	9 regencies: Tanal Laut, Kota Baru, Banjar, Barito Kuala, Tapin, Hulu Sungai Selatan, Hulu Sungai Utara, Tabalong
4	Municipalities	Banjarmasin
5	Capital	Banjarmasin

Source Directorate General Air Communications (1997a).

TABLE IX.4 KALIMANTAN TENGAH—BASIC GEOGRAPHY

No.	*Item*	*Description*
1	Area of province (square km)	153 564
2	Position	0°45' – 3°30' south latitude and 111° – 116° east longitude
3	Regencies	5 regencies: Kotawaringin Barat, K otawaringin Timur, Kapuas, Barito Selatan, Barito Utara
4	Municipalities	Palangkaraya
5	Capital	Palangkaraya

Source Directorate General Air Communications (1997a).

TABLE IX.5 SULAWESI TENGGARA—BASIC GEOGRAPHY

No.	*Item*	*Description*
1	Area of province (square km)	38 140
2	Position	3° – 6° south latitude and 120°45' – 124°60' east longitude
3	Regencies	4 regencies: Buton, Muna, Kendari and Kolaka
4	Municipalities	Kendari
5	Capital	Kendari

Source Directorate General Air Communications (1997a).

TABLE IX.6 SULAWESI TENGAH—BASIC GEOGRAPHY

No.	*Item*	*Description*
1	Area of province (square km)	63 689
2	Position	2°22' north latitude - 3°48' south latitude and 119°22' - 124°22' east longitude
3	Regencies	4 regencies: Banggai, Poso, Donggala, Buol Toli-toli
4	Municipalities	Palu
5	Capital	Palu

Source Directorate General Air Communications (1997a).

TABLE IX.7 TIMOR TIMUR—BASIC GEOGRAPHY

No.	*Item*	*Description*
1	Area of province (square km)	14 609
2	Position	
3	Regencies	13 regencies: Kovalima, Ainaro, Manufahi/Same, Vikeke, Lautem, Baucau, Manatutuo, Dili (Administrative City/KOTIP), Aileu, Likisia, Ermera, Bobonaro, Ambeno
4	Municipalities	
5	Capital	Dili

Source Directorate General Air Communications (1997a).

Economy

TABLE IX.8 GRDP OF NUSA TENGGARA BARAT, 1993–1996

(million rupiahs)[a]

No.	Sector	1993	1994	1995	1996
1	Agriculture	974 269	1 038 720	1 093 249	1 159 683
2	Mining and quarrying	75 642	82 624	90 283	99 490
3	Manufacturing industries	119 803	128 960	137 484	153 367
4	Electricity, gas and water supply	10 302	11 663	13 302	14 949
5	Construction	202 616	220 588	243 595	271 263
6	Trade, restaurants and hotels	380 716	410 925	472 373	523 293
7	Transport and communications	224 889	263 561	303 251	342 087
8	Finance, rent of building and business services	75 867	82 685	89 905	101 342
9	Service	486 459	496 175	512 185	529 821
Total		2 550 563	2 735 901	2 955 627	3 195 295

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TABLE IX.9 GRDP OF KALIMANTAN BARAT, 1993–1996

(million rupiahs)[a]

No.	Sector	1993	1994	1995	1996
1	Agriculture	1 290 959	1 341 633	1 442 874	1 556 550
2	Mining and quarrying	50 896	65 304	76 818	90 180
3	Manufacturing industries	1 031 609	1 123 573	1 212 278	1 316 671
4	Electricity, gas and water supply	30 592	35 054	41 624	49 581
5	Construction	290 346	322 284	380 519	437 923
6	Trade, restaurants and hotels	1 087 631	1 169 358	1 279 289	1 390 939
7	Transport and communications	511 693	566 104	614 345	682 914
8	Finance, rent of building and business services	390 214	375 942	410 103	450 128
9	Service	464 027	540 859	604 381	373 475
Total		5 147 967	5 540 111	6 062 231	6 348 361

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TABLE IX.10 GRDP OF KALIMANTAN SELATAN, 1993–1996

(million rupiahs)[a]

No.	*Sector*	*1993*	*1994*	*1995*	*1996*
1	Agriculture	1 121 283	1 143 463	1 227 408	1 296 316
2	Mining and quarrying	286 765	332 071	422 272	628 494
3	Manufacturing industries	870 693	1 024 984	1 151 561	1 175 494
4	Electricity, gas and water supply	52 729	59 420	65 992	72 642
5	Construction	268 901	283 224	312 375	356 521
6	Trade, restaurants and hotels	796 235	881 545	928 374	986 291
7	Transport and communications	457 698	509 434	551 284	594 456
8	Finance, rent of building and business services	247 024	255 416	260 478	277 407
9	Service	466 177	474 273	498 196	514 405
Total		4 567 505	4 963 830	5 417 940	5 902 026

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TABLE IX.11 GRDP OF KALIMANTAN TENGAH, 1993–1996

(million rupiahs)[a]

No.	*Sector*	*1993*	*1994*	*1995*	*1996*
1	Agriculture	1 126 755	1 271 256	130 699	1 491 861
2	Mining and quarrying	17 077	19 296	87 416	125 274
3	Manufacturing industries	412 728	433 852	451 254	460 914
4	Electricity, gas and water supply	6 930	8 212	10 812	12 054
5	Construction	195 159	209 765	223 248	257 042
6	Trade, restaurants and hotels	537 693	580 295	632 422	709 624
7	Transport and communications	347 834	357 461	382 548	472 224
8	Finance, rent of building and business services	96 730	100 617	108 092	110 440
9	Service	325 979	329 097	332 208	396 718
Total		3 066 885	3 309 851	2 358 699	4 036 151

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TABLE IX.12 GRDP OF SULAWESI TENGGARA, 1993–1996

(million rupiahs)[a]

No.	Sector	1993	1994	1995	1996
1	Agriculture	434 797	448 440	473 733	485 792
2	Mining and quarrying	39 467	41 862	45 519	54 498
3	Manufacturing industries	71 937	88 489	122 096	126 729
4	Electricity, gas and water supply	7 165	7 716	8 760	10 240
5	Construction	159 194	177 910	183 004	196 812
6	Trade, restaurants and hotels	145 990	153 869	165 150	182 257
7	Transport and communications	103 847	113 257	121 745	130 322
8	Finance, rent of building and business services	68 845	72 264	77 008	91 868
9	Service	257 938	267 603	275 499	282 484
Total		1 289 180	1 371 410	1 472 514	1 561 002

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TABLE IX.13 GRDP OF SULAWESI TENGAH, 1993–1996

(million rupiahs)[a]

No.	Sector	1993	1994	1995	1996
1	Agriculture	646 939	701 130	760 910	829 725
2	Mining and quarrying	50 545	53 797	58 263	63 766
3	Manufacturing industries	140 466	149 679	163 118	175 340
4	Electricity, gas and water supply	9 209	10 309	12 543	15 237
5	Construction	146 829	162 848	175 994	189 120
6	Trade, restaurants and hotels	212 493	230 496	247 748	268 686
7	Transport and communications	154 751	169 475	188 680	210 701
8	Finance, rent of building and business services	88 764	92 195	96 239	101 639
9	Service	305 461	318 946	338 979	358 435
Total		1 755 457	1 888 875	2 042 474	2 212 649

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

TABLE IX.14 GRDP OF TIMOR TIMUR, 1993–1996

(million rupiahs)[a]

No.	*Sector*	*1993*	*1994*	*1995*	*1996*
1	Agriculture	153 600	155 666	148 967	166 263
2	Mining and quarrying	5 114	5 342	6 132	7 000
3	Manufacturing industries	14 719	17 070	20 731	22 368
4	Electricity, gas and water supply	3 243	3 439	4 060	5 485
5	Construction	108 007	123 636	143 680	151 975
6	Trade, restaurants and hotels	48 126	62 233	64 757	70 947
7	Transport and communications	44 112	49 513	62 042	70 553
8	Finance, rent of building and business services	21 463	21 961	24 386	30 662
9	Service	117 040	127 870	145 431	161 087
Total		515 424	566 730	620 186	686 340

a. At constant 1993 prices.

Source Central Bureau of Statistics (BPS) (1997b).

Population

TABLE IX.15 POPULATION OF NUSA TENGGARA BARAT

Year	*Population*	*Density (person/ km^2)*
1971	2 203 000	109.18
1980	2 725 000	135.05
1990	3 370 000	167.02
1995	3 646 000	180.70
1996	3 707 700	183.76

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.16 POPULATION OF KALIMANTAN BARAT

Year	Population	Density (person/ km^2)
1971	2 020 000	13.76
1980	2 486 000	16.93
1990	3 229 000	21.99
1995	3 636 000	24.77
1996	2 429 400	16.55

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.17 POPULATION OF KALIMANTAN SELATAN

Year	Population	Density (person/ km^2)
1971	1 699 000	45.94
1980	2 065 000	55.83
1990	2 597 000	70.22
1995	2 893 000	78.22

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.18 POPULATION OF KALIMANTAN TENGAH

Year	Population	Density (person/ km^2)
1971	702 000	4.57
1980	954 000	6.21
1990	1 396 000	9.09
1995	1 627 000	10.59

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.19 POPULATION OF SULAWESI TENGGARA

Year	*Population*	*Density (person/ km²)*
1971	714 000	18.72
1980	942 000	24.70
1990	1 350 000	35.40
1995	1 587 000	41.61

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.20 POPULATION OF SULAWESI TENGAH

Year	*Population*	*Density (person/ km²)*
1971	914 000	14.35
1980	1 290 000	20.25
1990	1 771 000	27.81
1995	1 938 000	30.43

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.21 POPULATION OF TIMOR TIMUR

Year	*Population*	*Density (person/ km²)*
1971		
1980	555 000	37.99
1990	748 000	51.20
1995	840 000	57.50

Source Central Bureau of Statistics (BPS) (1997a).

TOURISM INFRASTRUCTURE

Tourist attractions/objects

TABLE IX.22 TOURIST ATTRACTIONS IN NUSA TENGGARA BARAT

No.	*Attraction name*	*Type*	*Attractions*	*Access route*
1	Taman wisata Suranadi	Natural park	Nature recreational, research, photography	Road: Mataram–Narmada (distance: 15 km, travel time: 30 min)
2	Taman Buru Pulau Moyo	Hunting	Hunting ground, beach recreational, sea underwater life	Road: Mataram–Sumbawa besar (8–10 hours) Air: Sumbawa besar–Tanjung pasir (helicopter)
3	Taman Buru Gunung Tambora Selatan	Hunting	Hunting ground, nature, research of flora and fauna	Sea: Mataram–Lombok Port (60 km, 4 hours) Road: Lombok Port–Pelabuhan Alas (9 km)
4	Taman Nasional Gunung Rinjani	National park	Flora and fauna, nature recreational, research, culture	Air: Jakarta–Mataram (travel time 2 hours) Road: Jakarta–Mataram (travel time 32 hours)
5	Batu Bolong	Nature	Nature, high land	
6	Gunung Pengson	Nature	Nature	
7	Pantai Sira	Nature	Beach recreational, nature	
8	Gili air, Gili Meno	Nature	Beach, sea park	
9	Gili Trawangan	Nature		
10	Pantai Kuta	Nature	Beach recreational	
11	Lunyuk	Nature	Beach recreational	
12	Hu-u	Nature	Hot spring water	
13	Talolai and Hangawera	Nature	Beach recreational	
14	Lebok Taliwang	Nature	Beach recreational	
15	Sape	Nature	Komodo, animal	

Source Department of Tourism, Post and Telecommunications (1998).

TABLE IX.23 TOURIST ATTRACTIONS IN KALIMANTAN BARAT

No.	*Attraction name*	*Type*	*Attractions*
1	Pulau Penibungan	Natural tour	Nature
2	Pulau Temajo	Natural tour	Water sport recreational
3	Pantai Kijing	Natural tour	Recreation, nature
4	Air Terjun Menaggar	Natural tour	Waterfall
5	Pantai Pasir Panjang	Natural tour	Rest area, water sport area
6	Gunung Poteng	Natural tour	Rest area, recreation
7	Tanjung Batu	Natural tour	Beach
8	Gunung Kalangbau	Natural tour	Recreation, nature
9	Danau Sebedang	Natural tour	Sport, recreation
10	Hutan Lindung Bening	Natural tour	Protective forest
11	Suaka M. Satwa G. Palung	Natural tour	Flora, fauna and recreation
12	Pantai Sungai Krinjil	Natural tour	Recreation, nature
13	Pantai Sungai Jawi	Natural tour	Recreation, nature
14	Air terjun Melapi	Natural tour	Recreation, nature
15	Danau Belidak & Danau Luar	Natural tour	Recreation, nature

Source Department of Tourism, Post and Telecommunications (1998).

TABLE IX.24 TOURIST ATTRACTIONS IN KALIMANTAN SELATAN

No.	*Attraction name*	*Type*	*Attractions*
1	Taman hutan Sultan Adam	Forestry park	Nature, lake, waterfall, flora, fauna
2	Pasar Terapung Kuin		Culture, recreational
3	Pulau Kembang		Wild life forest, recreational
4	Pulau Kaget		Fauna, recreational, nature
5	Kehidupan Sungai		Nature, recreational
6	Pulau Hijau		Recreational, wildlife
7	Penggosokan dan Pasah		Souvenir
8	Intan Martapura		Souvenir
9	Riam Kaman		Nature, recreational
10	Mu'ui		Nature, beach recreational
11	Pagar		Nature
12	Pagatan		Fisherman village, recreational
13	Sogung		Cave, stalagmite, stalagtite
14	Serang Tiung		Beach recreational

Source Department of Tourism, Post and Telecommunications (1998).

TABLE IX.25 TOURIST ATTRACTIONS IN KALIMANTAN TENGAH

No.	*Attraction name*	*Attractions*
1	Pantai Tanjung Keluang	Recreational, nature
2	Danau Burung	Bird migration, nature
3	Bukit Batu Tangkiling	Recreational, nature
4	Pantai Kumai	Nature, dolphin
5	Pantai Kubu	Recreational, nature
6	Taman Nas. Tanjung Putting	Research, nature
7	Kawasan Taman Wisata Tanjung Putting	Orang utan research, fauna

Source Department of Tourism, Post and Telecommunications (1998).

TABLE IX.26 TOURIST ATTRACTIONS IN SULAWESI TENGGARA

No.	*Attraction name*	*Type*	*Attractions*	*Access route*[a]
1	Taman Nasional Rawa Aopa Watumohai	National park	Forestry park, flora and fauna, hiking, camping	Road: Kendari–Labuya–Lanowulu (distance 145 km travel time 4 hours)
2	Pemandian Laut Bokori Maya Kasilampe		Natural swimming pool	
3	Air Terjun Pohara		Recreational	
4	Pantai Nirwana		Recreational	
5	Pemandangan Laut Bau-bau		Recreational	
6	Air Terjun Kolaka		Recreational	
7	Motonu NO		Nature, beach	
8	Cagar alam Kayu jati		Camping area, recreational	
9	Suaka Margasatwa Tanjung Peropa		'Anoa' animal and 'maleo' bird	

a. Where known.

Source Department of Tourism, Post and Telecommunications (1998).

TABLE IX.27 TOURIST ATTRACTIONS IN SULAWESI TENGAH

No.	*Attraction name*	*Attractions*	*Access route*[a]
1	Taman Nasional Lore Lindu	Hiking, camping, recreation, culture	Road: Palu–Palola (distance 105 km travel time 3 days; Palu–Sidoanto–Danau Lindu (distance 85 km travel time 7 hours); Palu–Sianto–Kulawi–Gimpu Lembah Besoa–Bada (distance 109 km travel time 6 hours) Air: Palu–Tentela (travel time 15–30 minutes)
2	Air panas Mantikole	Hot spring water, nature	
3	Danau Poso	Nature, beach, cave	
4	Kulawi	Culture	
5	Sumber air panas Bora	Hot spring water	
6	Bada Besoa Napu	Traditional village	
7	Tentena	Antiques	

a. Where known.

Source Department of Tourism, Post and Telecommunications (1998).

TABLE IX.28 TOURIST ATTRACTIONS IN TIMOR TIMUR

No.	*Attraction name*	*Type*	*Attractions*
1	Pulau Penibungan	Natural tour	Nature
2	Pulau Temajo	Natural tour	Water sport recreational
3	Pantai Kijing	Natural tour	Recreation, nature
4	Air Terjun Menaggar	Natural tour	Waterfall
5	Pantai Pasir Panjang	Natural tour	Rest area, water sport area
6	Gunung Poteng	Natural tour	Rest area, recreation
7	Tanjung Batu	Natural tour	Beach
8	Gunung Kalangbau	Natural tour	Recreation, nature
9	Danau Sebedang	Natural tour	Sport, recreation
10	Hutan Lindung Bening	Natural tour	Protective forest
11	Suaka M. Satwa G. Palung	Natural tour	Flora, fauna & recreation
12	Pantai Sungai Krinjil	Natural tour	Recreation, nature
13	Pantai Sungai Jawi	Natural tour	Recreation, nature
14	Air terjun Melapi	Natural tour	Recreation, nature
15	Danau Belidak & Danau Luar	Natural tour	Recreation, nature

Source Department of Tourism, Post and Telecommunications (1998).

PASSENGER TRANSPORT INFRASTRUCTURE
Air

TABLE IX.29 NUSA TENGGARA BARAT—AIRPORT INFRASTRUCTURE

No.	Airport and code	Max size aircraft	Infrastructure dimension (m)		Class	Development plan
1	Selaparang	F100	R/W	2100 x 40	I	R/W : 2250 x 45
	AMI	B737	T/W	120 x 23		Terminal : 2528 m^2
			Apron	304 x 60		
			Terminal	1980 m^2		
2	M. Salahudin	F27	R/W	1650 x 30	III	Aircraft max.: N250
	BMU		T/W	100 x 20		R/W : 1800 x 30
			Apron	171.6 x 71		
			Terminal	1282 m^2		
3	Brang Biji	F27	R/W	1450 x 30	III	Aircraft max.: CN235
	SWQ		T/W	85 x 15		R/W : 1470 x 30
			Apron	70 x 70		
			Terminal	510 m^2		
4	Lunyuk	NC212	R/W	850 x 23	V	
	LYK		T/W	75 x 15		
			Apron	40 x 60		
			Terminal	523 m^2		

Sources Directorate General Air Communications (1997a), Ministry of Communications, Directorate of Air Communications pers. comm. 1998.

TABLE IX.30 KALIMANTAN BARAT–AIRPORT INFRASTRUCTURE

No.	*Airport and code*	*Max size aircraft*	*Infrastructure dimension (m)*		*Class*	*Development plan*
1	Supadio	F28	R/W	1850 x 30	I	Aircraft max: B-737
	PNK	F100	T/W	75 x 18 145 x 18		R/W: 2000 x 30
			Apron	90 x 60 147 x 80		Terminal: 7712/ 5008 m^2
			Terminal	6490/271 m^2		
2	Rahadi	CN235	R/W	1400 x 30	III	Aircraft max: N-250
	Usman	F27	T/W	75 x 18		R/W: 1800 x 30
	KTG		Apron	120 x 40		Terminal: 824 m^2
			Terminal	540 m^2		
3	Singkawang	DHC6	R/W	750 x 23	IV	R/W: 970 x 30 m^2
			T/W	75 x 15		
			Apron	60 x 40		
			Terminal	50 m^2		
4	Paloh	DHC6	R/W	750 x 23	IV	
			T/W	75 x 15		
			Apron	40 x 30		
			Terminal	60 m^2		
5	Susilo	C212	R/W	1300 x 30	IV	
	SQG		T/W	75 x 15		
			Apron	60 x 40		
			Terminal	540 m^2		
6	Pangsuma	C212	R/W	1040 x 23	IV	
	PSU		T/W	120 x 18		
			Apron	80 x 45		
			Terminal	240 m^2		
7	Nangapinoh	C212	R/W	1000 x 23	IV	
	NGP		T/W	75 x 15		
			Apron	60 x 40		
			Terminal	100 m^2		

Sources Directorate General Air Communications (1997a), Ministry of Communications, Directorate of Air Communications pers. comm. 1998.

TABLE IX.31 KALIMANTAN SELATAN—AIRPORT INFRASTRUCTURE

No.	Airport and code	Max size aircraft	Infrastructure dimension [m]		Class
1	Syamsudin Noor BDJ	DC9/B737	R/W	2220 x 45	I
			T/W	100 x 30	
			Apron	320 x 90	
			Terminal	4600 m^2	
2	Stagen KBU	C212	R/W	900 x 23	III
			T/W	75 x 15	
			Apron	80 x 80	
			Terminal	300 m^2	
3	Batulicin	C212	R/W	1300 x 30	
4	Warukin	F27	R/W	1300 x 30	
			T/W	50 x 18	
			Apron	100 x 50	

Sources Directorate General Air Communications [1997a], Ministry of Communications, Directorate of Air Communications pers. comm. 1998.

TABLE IX.32 KALIMANTAN TENGAH—AIRPORT INFRASTRUCTURE

No.	Airport and code	Max size aircraft	Infrastructure dimension (m)		Class	Development plan
1	Tjilik Riwut	F28	R/W	2100 x 30	II	Terminal: 2909 m^2
	PKY	B737	T/W	113 x 22		
			Apron	138.4 x 80		
			Terminal	1700 m^2		
2	H. Asan Sampit	C212	R/W	1200 X 30	III	Aircraft max: CN235
	SMQ		T/W	75 x 15		R/W: 1400 x 30
			Apron	40 x 60		Terminal: 1364 m^2
			Terminal	400 m^2		
3	Iskandar/Pk. Bun	F27	R/W	1650 x 30	III	Aircraft max: N-250
	PKN	CN235	T/W	112.5 x 15		R/W: 1800 x 30
			Apron	94.4 x 77.5		Terminal: 2112 m^2
			Terminal	750 m^2		
4	Beringin	C212	R/W	900 x 23	IV	Aircraft max: CN235
	MTW		T/W	75 x 15		R/W: 1400 x 30
			Apron	60 x 40		Terminal: 308 m^2
			Terminal	240 m^2		
5	Sanggo	C212	R/W	750 x 23	IV	Aircraft max: CN235
	BTK		T/W	61.5 x 12		R/W: 1400 x 30
			Apron	40 x 60		Terminal: 1790 m^2
			Terminal	200 m^2		
6	Kuala Pembuang	C212	R/W	850 x 23	V	
	KLP		T/W	75 x 15		
			Apron	40 x 50		
			Terminal	50 m^2		
7	Tumbang Samba	BN2A	R/W	650 x 23	V	
	TSB		T/W	75 x 15		
			Apron	40 x 60		
			Terminal	50 m^2		
8	Kuala Kurun	C212	R/W	750 x 23	V	
	KLK		T/W	75 x 15		
			Apron	40 x 60		
			Terminal	120 m^2		

Sources Directorate General Air Communications (1997a), Ministry of Communications, Directorate of Air Communications pers. comm. 1998.

TABLE IX.33 SULAWESI TENGGARA—AIRPORT INFRASTRUCTURE

No.	Airport and code	Max size aircraft	Infrastructure dimension (m)		Class	Development plan
1	W. Mongonsidi	F100	R/W	1850 x 30	II	Aircraft max: B737
	KDI		T/W	75 x 23		R/W: 2000 x 30
			Apron	210 x 60		
			Terminal	976 m^2		
2	Pomala	C212	R/W	850 x 23	na	
	PUM		T/W	75 x 15		
			Apron	60 x 40		
			Terminal	106 m^2		
3	Sugimanuru	C212	R/W	850 x 23	V	
	RAQ		T/W	75 x 15		
			Apron	60 x 40		
			Terminal	50 m^2		
4	Beto Ambari	C212	R/W	850 x 23	V	
	BUW		T/W	75 x 15		
			Apron	61 x 50		
			Terminal	120 m^2		

Sources Directorate General Air Communications (1997a), Ministry of Communications, Directorate of Air Communications pers. comm. 1998.

TABLE IX.34 SULAWESI TENGAH–AIRPORT INFRASTRUCTURE

No.	Airport and code	Max size aircraft	Infrastructure dimension (m)		Class	Development plan
1	Mutiara	B737	R/W	2100 x 30	II	Terminal: 3200 m^2
	PLW		T/W	98 x 23, 98 x 23		
			Apron	222.5 x 78		
			Terminal	1296 m^2		
2	Bubung	C212	R/W	1300 x 30	III	
	LUW		T/W	75 x 15		
			Apron	60 x 40		
			Terminal	324 m^2		
3	Kasiguncu	C212	R/W	1170 x 23	IV	
	PSJ		T/W	75 x 18		
			Apron	60 x 60		
			Terminal	243 m^2		
4	Lalos	C212	R/W	850 x 23	IV	R/W: 1400 x 23 m^2
	TLI		T/W	75 x 15		Terminal: 450 m^2
			Apron	40 x 60		
			Terminal	364 m^2		

Sources Directorate General Air Communications (1997a), Ministry of Communications, Directorate of Air Communications pers. comm. 1998.

TABLE IX.35 TIMOR TIMUR–AIRPORT INFRASTRUCTURE

No.	Airport and code	Max size aircraft	Infrastructure dimension (m)		Class	Development plan
1	Komoro/Dili	DC9	R/W	1850 x 30	II	
			T/W	150 x 133		
			Apron	1665 x 87.5		
			Terminal	1908 m^2		

Source Directorate General Air Communications (1997b).

Road

TABLE IX.36 ROAD LENGTH IN NUSA TENGGARA BARAT BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

(km)

	State	*Province*	*Regency*[a]	*Municipality*	*Total*
1995					
Type of surface					
- asphalt	627	988	1 755	0	3 370
- gravel	0	214	595	0	809
- earth	0	49	2 165	0	2 214
- others	0	281	279	0	560
Total	627	1 532	4 794	0	6 953
Road condition					
- good	627	630	1 024	0	2 281
- moderate	0	558	979	0	1 537
- damaged	0	0	1 989	0	1 989
- badly damaged	0	344	802	0	1 146
Total	627	1 532	4 794	0	6 953
1996					
Type of surface					
- asphalt	627	1 016	1 803	0	3 446
- gravel	0	220	611	0	831
- earth	0	50	2 224	0	2 274
- others	0	289	287	0	576
Total	627	1 575	4 925	0	7 127
Road condition					
- good	627	648	1 052	0	2 327
- moderate	0	573	1 006	0	1 579
- damaged	0	0	2 043	0	2 043
- badly damaged	0	354	824	0	1 178
Total	627	1 575	4 925	0	7 127

a. Including Mataram Municipality.

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.37 ROAD LENGTH IN KALIMANTAN BARAT BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

(km)

	State	*Province*	*Regency*	*Municipality*	*Total*
1995					
Type of surface					
- asphalt	772	897	1 499	279	3 447
- gravel	297	585	909	0	1 791
- earth	399	574	4 801	16	5 790
- others	0	0	329	0	329
Total	1 468	2 056	7 538	295	11 357
Road condition					
- good	1 055	862	1 237	176	3 330
- moderate	72	644	1 091	94	1 901
- damaged	88	48	1 980	25	2 141
- badly damaged	253	502	3 230	0	3 985
Total	1 468	2 056	7 538	295	11 357
1996					
Type of surface					
- asphalt	1 055	953	1 552	339	3 899
- gravel	72	622	941	0	1 635
- earth	88	610	4 972	19	5 689
- others	253	0	341	0	594
Total	1 468	2 185	7 806	358	11 817
Road condition					
- good	1 055	916	1 281	214	3 466
- moderate	72	684	1 130	114	2 000
- damaged	88	52	2 050	30	2 220
- badly damaged	253	533	3 345	0	4 131
Total	1 468	2 185	7 806	358	11 817

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.38 ROAD LENGTH IN KALIMANTAN SELATAN BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

(km)

	State	*Province*	*Regency*	*Municipality*	*Total*
1995					
Type of surface					
- asphalt	690	773	2 993	263	4 719
- gravel	0	303	1 493	30	1 826
- earth	0	59	621	27	707
- others	0	0	281	0	281
Total	690	1 135	5 388	320	7 533
Road condition					
- good	690	843	1 902	51	3 486
- moderate	0	266	1 102	237	1 605
- damaged	0	26	1 905	32	1 963
- badly damaged	0	0	479	0	479
Total	690	1 135	5 388	320	7 533
1996					
Type of surface					
- asphalt	690	822	3 088	301	4 901
- gravel	0	322	1 541	34	1 897
- earth	0	63	641	31	735
- others	0	0	290	0	290
Total	690	1 207	5 560	366	7 823
Road condition					
- good	690	896	1 963	59	3 608
- moderate	0	283	1 137	271	1 691
- damaged	0	28	1 966	36	2 030
- badly damaged	0	0	494	0	494
Total	690	1 207	5 560	366	7 823

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.39 ROAD LENGTH IN KALIMANTAN TENGAH BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

(km)

	State	*Province*	*Regency*	*Municipality*	*Total*
1995					
Type of surface					
- asphalt	418	444	1 690	305	2 857
- gravel	113	194	627	163	1 097
- earth	120	498	5 928	68	6 614
- others	1 854	91	854	0	2 799
Total	2 505	1 227	9 099	536	13 367
Road condition					
- good	860	186	1 730	309	3 085
- moderate	1 541	496	2 414	196	4 647
- damaged	104	545	2 212	28	2 889
badly damaged	0	0	2 743	3	2 746
Total	2 505	1 227	9 099	536	13 367
1996					
Type of surface					
- asphalt	860	450	1 797	370	3 477
- gravel	1 541	197	667	198	2 603
- earth	104	505	6 304	82	6 995
- others	0	92	908	0	1 000
Total	2 505	1 244	9 676	650	14 075
Road condition					
- good	860	189	1 840	374	3 263
- moderate	1 541	502	2 567	238	4 848
- damaged	104	553	2 352	34	3 043
- badly damaged	0	0	2 917	4	2 921
Total	2 505	1 244	9 676	650	14 075

Source Central Bureau of Statistics (BPS) [1997a].

TABLE IX.40 ROAD LENGTH IN SULAWESI TENGGARA BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

(km)

	State	*Province*	*Regency*	*Municipality*	*Total*
1995					
Type of surface					
- asphalt	407	810	1 590	0	2 807
- gravel	0	311	1 432	0	1 743
- earth	0	64	1 420	0	1 484
- others	0	0	609	0	609
Total	407	1 185	5 051	0	6 643
Road condition					
- good	374	540	863	0	1 777
- moderate	33	508	1 414	0	1 955
- damaged	0	137	1 156	0	1 293
- badly damaged	0	0	1 618	0	1 618
Total	407	1 185	5 051	0	6 643
1996					
Type of surface					
- asphalt	374	842	1 631	0	2 847
- gravel	33	323	1 469	0	1 825
- earth	0	67	1 456	0	1 523
- others	0	0	625	0	625
Total	407	1 232	5 181	0	6 820
Road condition					
- good	374	562	885	0	1 821
- moderate	33	528	1 450	0	2 011
- damaged	0	142	1 186	0	1 328
- badly damaged	0	0	1 660	0	1 660
Total	407	1 232	5 181	0	6 820

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.41 ROAD LENGTH IN SULAWESI TENGAH BY RESPONSIBILITIES, TYPE OF SURFACE AND ROAD CONDITION, 1995 AND 1996

(km)

	State	*Province*	*Regency*	*Municipality*	*Total*
1995					
Type of surface					
- asphalt	554	1 011	1 172	0	2 737
- gravel	415	1 470	2 265	0	4 150
- earth	0	110	1 170	0	1 280
- others	0	0	1 367	0	1 367
Total	969	2 591	5 974	0	9 534
Road condition					
- good	581	275	1 436	0	2 292
- moderate	275	262	1 674	0	2 211
- damaged	56	960	1 698	0	2 714
- badly damaged	57	1 094	1 166	0	2 317
Total	969	2 591	5 974	0	9 534
1996					
Type of surface					
- asphalt	581	1 044	1 207	0	2 832
- gravel	275	1 518	2 332	0	4 125
- earth	56	114	1 205	0	1 375
- others	57	0	1 408	0	1 465
Total	969	2 676	6 152	0	9 797
Road condition					
- good	581	284	1 479	0	2 344
- moderate	275	271	1 723	0	2 269
- damaged	56	991	1 749	0	2 796
- badly damaged	57	1 130	1 201	0	2 388
Total	969	2 676	6 152	0	9 797

Source Central Bureau of Statistics (BPS) (1997a).

TABLE IX.44 KALIMANTAN BARAT—AIR ROUTES AND FREQUENCIES, 1996

No.	Route	Operator	Aircraft type	Flights per week
1	Pontianak–Jakarta	Garuda	F28	14
		Merpati	F28	28
			F100	14
		Sempati	F28	7
		Bouraq	VC8	7
2	Pontianak–Singapore	Merpati	F28	2
3	Pontianak–Balikpapan	Merpati	F28	3
4	Pontianak–Sintang	Dirgantara	BN2A	4
5	Pontianak–Hang Nadim	Merpati	F28	5
			ATP	2
6	Ketapang–Jakarta	Merpati	CN235	3
7	Ketapang–Pangkalan Bun	Merpati	CN235	3
8	Putusibau–Sintang	Dirgantara	BN2A	4

Source Directorate General Air Communications (1997a).

TABLE IX.45 KALIMANTAN SELATAN—AIR ROUTES AND FREQUENCIES, 1996

No.	Route	Operator	Aircraft type	Flights per week
1	Banjarmasin–Jakarta	Garuda	B737	7
		Merpati	F100	14
			F28	7
		Bouraq	B737	7
2	Banjarmasin–Palangkaraya	Merpati	F28	7
3	Banjarmasin–Surabaya	Merpati	F28	7
		Sempati	B737	7
		Bouraq	B737	16
4	Banjarmasin–Semarang	Bouraq	HS748	7
5	Banjarmasin–Balikpapan	Bouraq	HS748	7

Source Directorate General Air Communications (1997a).

TABLE IX.46 KALIMANTAN TENGAH—AIR ROUTES AND FREQUENCIES, 1996

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
1	Palangkaraya–Jakarta	Merpati	F28	7
2	Palangkaraya–Surabaya	Sempati	F27	14
3	Palangkaraya–Balikpapan	Sempati	F27	7
4	Palangkaraya–Banjarmasin	Sempati	F27	7
5	Pangkalan Bun–Semarang	Merpati	CN235	7

Source Directorate General Air Communications (1997a).

TABLE IX.47 SULAWESI TENGGARA—AIR ROUTES AND FREQUENCIES, 1996

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
1	Kendari–Ujung Pandang	Merpati	F28	7
		Sempati	F28	7

Source Directorate General Air Communications (1997a).

TABLE IX.48 SULAWESI TENGAH—AIR ROUTES AND FREQUENCIES, 1996

No.	*Route*	*Operator*	*Aircraft type*	*Flights per week*
1	Palu–Balikpapan	Bouraq	B737	7
2	Palu–Ujung Pandang	Merpati	F100	7
		Bouraq	B737	7
3	Palu–Toli-toli	Merpati	C212	6
4	Palu–Gorontalo	Merpati	C212	2
		Bouraq	HS748	5
5	Palu–Manado	Bouraq	HS748	2
6	Palu–Poso	Merpati	C212	1
7	Palu–Luwuk	Merpati	C212	6
8	Poso–Luwuk	Merpati	C212	1
9	Luwuk–Manado	Merpati	C212	1

Source Directorate General Air Communications (1997a).

TABLE IX.51 KALIMANTAN SELATAN—AIR TRANSPORT DEMAND, 1994–1997

No.	Year	Flights			Passengers			
		Arrivals	Departures	Total	Arrivals	Departures	Total	Transit
1	SYAMSUDIN NOOR / BANJARMASIN							
	1994	6 412	6 235	12 647	224 266	208 973	433 239	27 792
	1995	5 828	5 800	11 628	270 654	255 168	525 822	27 412
	1996	6 309	6 307	12 616	278 339	272 154	550 493	31 345
	1997	5 739	5 724	11 463	293 358	276 632	569 990	22 315
2	STAGEN / KOTABARU							
	1994	492	492	984	3 481	3 398	6 879	0
	1995	606	606	1 212	3 520	3 378	6 898	0
	1996	879	879	1 758	6 109	6 216	12 325	0
	1997	516	516	1 032	3 828	3 459	7 287	0

Source Angkasa Pura 1 (1998).

TABLE IX.52 KALIMANTAN TENGAH—AIR TRANSPORT DEMAND, 1994–1997

No.	Year	Flights			Passengers			
		Arrivals	*Departures*	*Total*	*Arrivals*	*Departures*	*Total*	*Transit*
1	TJILIK RIWUT / PALANGKARAYA							
	1994	3 177	3 176	6 353	67 292	68 481	135 773	3 526
	1995	2 931	2 933	5 864	85 090	85 376	170 466	850
	1996	3 387	3 387	6 774	91 455	91 025	182 480	1 049
	1997	1 982	1 978	3 960	60 378	60 682	121 060	275
2	ISKANDAR / PANGKALAN BUN							
	1994	2 613	2 609	5 222	27 927	29 200	57 127	4 141
	1995	2 578	2 579	5 157	27 126	28 324	55 450	3 985
	1996	2 786	2 776	5 562	28 039	32 934	60 973	4 572
	1997	1 837	1 834	3 671	17 878	18 372	36 250	3 123
3	H. A S A N / SAMPIT							
	1994	1 405	1 397	2 802	12 520	13 729	26 249	107
	1995	1 480	1 485	2 965	12 260	13 714	25 974	177
	1996	1 445	1 447	2 892	11 410	12 699	24 109	455
	1997	935	935	1 870	5 906	7 044	12 950	424
4	BERINGIN / MUARA TEWEH							
	1994	630	630	1 260	6 634	7 467	14 101	0
	1995	393	393	786	5 557	5 709	11 266	0
	1996	369	369	738	6 336	6 615	12 951	0
	1997	276	273	546	4 565	4 523	9 088	0
5	KUALA PEMBUANG							
	1994	332	332	664	2 635	2 485	5 120	0
	1995	175	175	350	1 369	245	2 604	0
	1996	317	317	634	2 434	2 343	4 777	0
	1997	193	193	386	1 263	1 110	2 373	0
6	KUALA KURUN							
	1994	267	267	534	1 620	1 559	3 179	0
	1995	117	117	234	413	519	932	1 127
	1996	70	70	140	720	530	1 250	120
	1997	50	50	100	591	560	1 151	0

Source Angkasa Pura 1 [1998].

TABLE IX.53 SULAWESI TENGGARA–AIR TRANSPORT DEMAND, 1994–1997

		Flights			*Passengers*			
No.	*Year*	*Arrivals*	*Departures*	*Total*	*Arrivals*	*Departures*	*Total*	*Transit*
1	W. MONGINSIDI / KENDARI							
	1994	679	679	1 357	34 701	36 742	71 443	557
	1995	737	737	1 475	39 357	42 433	81 790	0
	1996	968	968	1 936	49 453	50 656	100 109	0
	1997	803	803	1 606	64 537	69 197	133 734	0
2	BETOAMBARI / BUTON							
	1994	2	3	5	11	11	22	0
	1995	2	2	4	10	10	20	0
	1996	0	0	0	0	0	0	0
	1997	0	0	0	0	0	0	0
3	POMALA							
	1994	97	97	194	878	1 214	2 092	0
	1995	95	95	190	725	1 316	2 041	0
	1996	48	48	96	201	597	798	0
	1997	na	na	0	na	na	0	na

Source Angkasa Pura 1 (1998).

TABLE IX.54 SULAWESI TENGAH—AIR TRANSPORT DEMAND, 1994–1997

No.	Year	Flights			Passengers			
		Arrivals	Departures	Total	Arrivals	Departures	Total	Transit
1	MUTIARA / PALU							
	1994	2 699	2 703	5 402	66 993	69 396	136 389	16 579
	1995	2 232	2 231	4 463	86 400	74 743	161 143	17 516
	1996	2 625	2 624	5 249	95 927	121 097	217 023	19 509
	1997	2 126	2 127	4 253	90 088	79 134	16 922	18 825
2	LALOS / TOLI-TOLI							
	1994	311	311	622	3 763	3 896	7 658	5
	1995	352	352	704	4 198	4 535	8 733	0
	1996	317	317	634	3 578	3 790	7 368	0
	1997	269	267	536	2 446	2 487	4 933	0
3	BUBUNG / LUWUK							
	1994	457	457	914	5 089	5 238	10 327	67
	1995	479	479	958	5 417	5 557	10 974	0
	1996	411	411	822	4 556	4 811	9 367	0
	1997	386	386	772	3 283	3 866	7 149	2
4	KASIGUNCU / POSO							
	1994	71	71	142	170	320	490	567
	1995	24	24	48	118	97	215	85
	1996	15	15	30	48	27	75	10
	1997	3	3	6	13	0	13	0
5	POGUGUL							
	1994	1	1	2	10	0	10	0
	1995	9	9	18	30	26	56	7
	1996	5	5	10	15	14	29	0
	1997	1	1	2	3	3	6	0

Source Angkasa Pura 1 (1998).

TABLE IX.55 TIMOR TIMUR—AIR TRANSPORT DEMAND, 1994–1997

		Flights			Passengers			
No.	Year	Arrivals	Departures	Total	Arrivals	Departures	Total	Transit
1	KOMORO DILI							
	1994	761	761	1 522	29 615	33 316	62 931	0
	1995	483	483	966	22 189	23 335	45 524	0
	1996	na	na	0	na	na	0	na
	1997	505	505	1 010	29 290	31 771	61 061	0
2	BAUCAU							
	1994	na	na	0	na	na	0	na
	1995	na	na	0	na	na	0	na
	1996	24	24	48	322	227	549	0
	1997	50	50	100	528	903	1 431	0

Source Angkasa Pura 1 [1998].

International tourism demand

TABLE IX.56 NUMBER OF FOREIGN TOURISTS STAYING AT HOTELS, 1991–1997

Province	1991[a]	1992[a]	1993[b]	1994[a]	1995[a]	1996[a]	1997[c]
NTB	85 016	99 244	53 430	121 326	283 691	181 728	88 475
Kalimantan Barat	20 205	38 380	39 907	28 540	25 021	26 619	12 374
Kalimantan Tengah	571	326	170	222	408	557	-
Kalimantan Selatan	4 784	8 019	6 670	6 728	6 513	6 582	7 527
Sulawesi Tengah	2 350	1 938	4 751	5 262	12 621	11 339	2 176
Sulawesi Tenggara	660	533	572	604	666	695	254
Timor Timur	20 679	672	933	1 447	1 103	1 004	-
Total	134 265	149 112	106 433	164 129	330 023	228 524	110 806

a. Foreign visitors at all accommodation, stars and non-stars.

b. Foreign visitors at all starred accommodation only.

c. 1997 figures are provisional and only for hotels with stars.

Source Ministry of Tourism, Arts and Culture [1998].

APPENDIX X

SURVEY OF TRAVEL AGENTS

Contact person _____ Form No. ___

Phone/Fax/Email _____

1. If a client requested advice about safety and personal security in Indonesia what advice would you give ? That Indonesia is ...

Very safe ☐ Relatively safe ☐ Neutral ☐ Relatively dangerous ☐
Prohibitively dangerous ☐

Further comments

_____
_____
_____

2. Indonesia is a large and diverse country. Are there any particular provinces or areas which differ from your general advice, particularly in eastern Indonesia ?

_____
_____
_____

3. What is your impression of how your clients perceive personal safety in Indonesia ?

Very safe ☐ Relatively safe ☐ Neutral ☐ Relatively dangerous ☐
Prohibitively dangerous ☐

Further comments

_____
_____
_____

4. The impact of the economic crisis on tourism to Indonesia in the short term (1-2 years) will be ...

Very negative ☐ Negative ☐ Neutral ☐ Negligible ☐ Positive ☐

Further comments

5. The impact of the economic crisis on tourism to Indonesia over the long term (more than 5 years) will be ...

Very negative ☐ Negative ☐ Neutral ☐ Negligible ☐ Positive ☐

Further comments

6. From your experience in dealing with potential tourists' concerns, please rank the following factors in order of their importance from 1 to 5 (where 1 = most important and 5 = least important) in influencing the decision to travel to Indonesia.

Financial cost ☐ Environment ☐ Ease of travel ☐

Personal safety ☐ Quality and diversity of tourism attractions ☐

7. Please rank each of the Indonesian provinces below in terms of the availability of tourism information to you and your knowledge of the area.

	Very Good	*Good*	*Average*	*Poor*	*Very Poor*
Bali	☐	☐	☐	☐	☐
Nusa Tenggara Barat (Lombok)	☐	☐	☐	☐	☐
Nusa Tenggara Timur (Komodo, Flores)	☐	☐	☐	☐	☐
Sulawesi (Manado,Tana Toraja)	☐	☐	☐	☐	☐
Maluku (Ambon, Banda Islands)	☐	☐	☐	☐	☐
Irian Jaya (Baliem Valley, Asmat tribes)	☐	☐	☐	☐	☐
Kalimantan (Dayak tribes)	☐	☐	☐	☐	☐

Further comments

8. Are you aware of the recent 'Happy Day' which began the 'Let's Go Indonesia' promotion announced by the Indonesian Ministry of Tourism, Art and Culture? If so, do you have enough information to actively participate and promote it to potential tourists?

9. Please rank eastern Indonesia (excluding Bali) on the following tourism quality indicators:

	Very Good	*Good*	*Adequate*	*Poor*	*Very Poor*
Airline standard and service	☐	☐	☐	☐	☐
Airport standard	☐	☐	☐	☐	☐
Accessibility of tourism attractions	☐	☐	☐	☐	☐
Hotel standard and quality	☐	☐	☐	☐	☐
Quality of tourism attractions	☐	☐	☐	☐	☐

Further comments

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