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In the last decades of the twentieth century the small and medium-sized nations of East and South-East Asia have begun a process of potentially enormous political and economic transformation. Explosive growth has occurred already in many parts of the region, and the more slowly growing countries are attempting to emulate this vanguard group. The impact of the region upon the world economy has increased rapidly and is likely to continue to do so in the future.

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The Shaping of Malaysia

Edited by

Amarjit Kaur
Associate Professor and Head of Department of Economic History
University of New England, Armidale
New South Wales
Australia

and

Ian Metcalfe
Associate Professor, Division of Earth Sciences
University of New England, Armidale
New South Wales
Australia

Foreword by Malcolm Falkus

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Contents

List of Figures

List of Maps

List of Tables

Appendices

Foreword

It is a pleasure to introduce this important volume of studies on Malaysia. The book had its origins at a Colloquium held in 1995 at the University of New England. That Colloquium showed, and this book confirms, how an interdisciplinary approach to a region can enhance our understanding of each particular aspect. Thus, the tropical wonderland which attracted miners, traders, and planters; which forged a unique ethnic and cultural demographic blend; and which today is one of the most economically developed and politically stable among Southeast Asian countries, had origins which can be traced back across the millennia.

The several authors of these studies are all experts in their fields, and all have had extensive research experience in Malaysia. Malaysia's economic growth described in the contributions by Amarjit Kaur and John Drabble has in part been shaped by the political structures and demographic patterns analysed by Alberto Gomes and Cheah Boon Kheng. But the economy and society which developed both in Peninsular Malaysia and in East Malaysia cannot be understood fully without consideration of the forest flora and fauna discussed by N. Prakash and Lesley Rogers. This, in turn, introduces one of the great dilemmas facing so many fast-developing countries today: how can an economy based on the exploitation of natural resources (whether by farmers, miners, industrialists, or tourists) continue to grow, without destruction of an environment which will in turn bring economic success to a halt. This is a theme developed by Gisela Kaplan. And it is salutary to reflect, as the chapter by Ian Metcalfe encourages us to do, on the extent to which Malaysia's present condition rests upon geographical and geological foundations established in primordial times. From this perspective what we call economic growth has taken place in but the bat of an eyelid, and the book serves to remind the present generation of its obligations not only to future generations but to its heritage.

Malcolm Falkus

Preface

The Shaping of Malaysia brings together for the first time studies on the geological origins and mineral resources, flora, fauna, peoples and cultures, political development, economy and society, environment and ecotourism in Malaysia and encapsulates the integration of the country into the wider international economy. The book also attempts to make Malaysia's current economic and political development more explicable by considering it in the light of these natural and human resource endowments and by exploring how they have changed over time. The book originates from the Ninth Biennial Malaysia Society Colloquium convened by Amarjit Kaur on 'Research on Malaysia - Recent Advances' at the Faculty of Economics, Business and Law, University of New England in October 1995. Unlike previous Malaysia Society colloquia which focused on economic and social issues, the Ninth Biennial Colloquium attracted participants from the sciences, reflecting diverse interests on the essential elements in the evolution of the country.

More than twenty papers were presented at the colloquium by scholars from Australia and Malaysia on their research findings and work-in-progress on Malaysia. These were organised by topics into eight panels covering: 'Economy and Economic Change'; 'Wage Labour and Social Change'; 'The Political Economy of Forest Resources'; 'Science'; 'Society and Culture'; 'Language and Literature'; and 'Politics and Ethnicity'. This book brings together six papers originally presented at the Colloquium and two invited papers. A number of the original papers strayed too far from the central theme of this book, or were too narrowly focussed to provide the necessary overview of the factors that have shaped Malaysia, and are therefore not included. Some of the original papers have been substantially revised for inclusion in this volume.

We would like to thank Malcolm Falkus for his support and Fay Hardingham for preparing the camera ready copy for publication. Ian Metcalfe computer drafted the maps and figures included in the book.

Amarjit Kaur & Ian Metcalfe
University of New England

Preliminary Note

The term Sabah is used in the text to refer to the modern state of Sabah. Prior to 1963, the state was known as British North Borneo. Although the current practice is to refer to East Malaysia as Sabah and Sarawak, the term East Malaysia is used here in its *geographical* sense to refer to the two Borneo territories.

The new spelling system adopted by Indonesia and Malaysia has been followed for Malay words; for example *pengiran*. The spelling of place names and rivers follows current practice; for example, Kuching and Rajang.

All dollar figures quoted (unless otherwise stated) are in Straits (later Malayan/Malaysian) dollars or *ringgit*. In the nineteenth century the value of the Straits dollar fluctuated, but in 1904 it was pegged to sterling at the rate of M$1.00 to 2s 4d (about US $0.40–0.60 in pre World War II terms). From 1947 to 1974 M$1.00 was equal to about US$0.33. After 1973, when Malaysia opted out of the sterling area and floated the *ringgit* against the US dollar and the British pound, the *ringgit* appreciated. In the wake of the Asian financial crisis, the Malaysian ringgit is (at the time of printing) worth US$0.25 cents and £0.15.

Notes on the Contributors

CHEAH BOON KHENG

Dr Cheah Boon Kheng was formerly Professor of History at the School of Humanities, Universiti Sains Malaysia in Penang (1978-1994) and also lectured at the University of Malaya from 1972 to 1974. He obtained his MA and PhD degrees from the University of Malaya and the Australian National University respectively. His publications include *Red Star Over Malaya: Resistance and Social Conflict During and After the Japanese Occupation, 1941-1946* (Singapore: Singapore University Press, 1983) and *The Peasant Robbers of Kedah: Historical and Folk Perceptions* (Kuala Lumpur: Oxford University Press, 1988). He is a Vice-President of the Malaysian Branch of the Royal Asiatic Society. He is currently editing the volume on economy and society for the Encyclopedia of Malaysia.

JOHN H. DRABBLE

Dr John Drabble obtained MA and PhD degrees in History from the Universities of Cambridge and London, U.K., respectively. He was lecturer at the University of Malaya from 1968 to 1974 and then successively Senior Lecturer and Reader in Economic History at the University of Sydney from 1974 until his retirement in 1994. He currently holds an honorary research position at the University of Sydney. He has extensive experience researching the economic history of Malaysia (especially the Rubber Industry) and has published widely on this topic including *Rubber in Malaya 1876-1922: The Genesis of the Industry* (Kuala Lumpur: Oxford University Press, 1973) and *Malayan Rubber: The Interwar Years* (London: Macmillan, 1991). He is currently completing a book on the general economic history of Malaysia.

ALBERTO GOMES

Dr Alberto Gomes is Senior Lecturer in the School of Sociology, Politics and Anthropology, La Trobe University. He was born in in Malaysia and worked as an academic at the University of Malaya from 1977 to 1989. He studied at the University of Malaya for his BA (Hons) and MA and the Australian National University for his PhD in anthropology which he obtained in 1987. Much of his research and publications are on the

Malaysian Aborigines (*Orang Asli*) but he is currently studying cultural identities among Goan Indians. Some of his recent publications include *Modernity and Identity: Asian Illustrations* (1994) and *Malaysia and the Original People* (with R. Dentan, K. Endicott, and B. Hooker, 1997).

GISELA KAPLAN

Professor Gisela Kaplan is a social scientist who has lectured widely in Europe, the USA and in Australia. She has been joint editor of the *Australian and New Zealand Journal of Sociology* and also editor-in-chief of the *Australian Journal of Social Issues*. She became founding professor of the School of Social Science at Queensland University of Technology in Brisbane and is now Adjunct Professor in the Research Centre of Aboriginal and Multicultural Studies at the University of New England, Armidale, NSW. She has published eight books, amongst them: *Hannah Arendt: Thinking, Judging, Freedom* (1989), *Contemporary Western European Feminism* (1992) and jointly with Lesley Rogers an environmentalist/ethnological study entitled *Orang-Utans in Borneo*, Armidale: University of New England Press (1994). The latter was based on years of field work in Sabah and her research also resulted in a substantial number of publications in journals and the popular press. Her latest work, in press, is entitled *The Grieving of Australia. A Nation Ponders its Future*, Cambridge University Press.

AMARJIT KAUR

Amarjit Kaur was born in Kuala Lumpur. She obtained her BA (Hons) and MA from the University of Malaya and her PhD from Columbia University in New York. She is currently Associate Professor and Head, Department of Economic History at the University of New England, Armidale, Australia. Prior to joining the University of New England, Dr Kaur was an Associate Professor in the History Department at the University of Malaya in Kuala Lumpur, where she taught Southeast Asian and Malaysian History/Economic History from 1978 to 1990. She has researched extensively in this field and her publications include four sole-authored books, three edited books, one multi-authored book, book chapters and articles in professional journals. In 1983-84, she held an American Council of Learned Societies/Fulbright Fellowship at the Economics Department, Harvard University. She was also a Senior Associate Member at St Antony's College, Oxford University in 1989-90; Visiting Fellow at Clare Hall, Cambridge in the first half of 1994 and Visiting Fellow on secondment at the Australian National University in

the second half of 1994. Her latest book, *Economic Change in East Malaysia: Sabah and Sarawak since 1850* (Macmillan) was released in 1998. Dr Kaur is currently writing a book on Wage Labour in Southeast Asia.

IAN METCALFE

Ian Metcalfe is currently an Associate Professor in the Division of Earth Sciences, School of Physical Sciences and Engineering, University of New England. He was Lecturer and Senior Lecturer in the Geology Departments of the University of Malaya and the National University of Malaysia, and in the Institute of Advanced Studies, University of Malaya from 1977 to 1989. He has extensive teaching and research experience on the geology of Malaysia and Southeast Asia and is regarded as one of the foremost authorities on the geological evolution of East and Southeast Asia. During the last decade he has made significant contributions to global palaeogeographic reconstructions of Gondwanaland, Pangea and the eastern part of the ancient Tethys Ocean. He has over 120 publications including: 1 research monograph, 2 edited books, 4 book chapters, 59 refereed journal articles and 2 edited journal volumes. He obtained his B.Sc. (Hons) in Geology from the University of Durham, U.K. in 1971 and holds a Ph.D. from the University of Leeds, U.K. (1976). He was Australian Science Coordinator for the International Ocean Drilling Program (1992-1995), is on the editorial boards of a number of journals including the *Journal of Asian Earth Sciences*, is a member of the Australian Academy of Sciences Committee for Solid Earth Sciences, and was Co-Leader of the International Geological Correlation Program Project 'Gondwana Dispersion and Asian Accretion' (1991-1996). Assoc. Prof. Metcalfe is also currently Secretary of the International Union of Geological Sciences Subcommission on Carboniferous Stratigraphy, and Editor of the *Newsletter on Carboniferous Stratigraphy*. He has held visiting positions at Nottingham, Oxford, Australian National and Macquarie Universities, a Visiting Professorship at the Université d'Orléans, France, and is currently Honorary Research Fellow at Macquarie University, Sydney.

NALLAMILLI PRAKASH

Dr N. Prakash is Associate Professor and Head of the Department of Botany at the University of New England. He worked as a lecturer in Botany at the University of Malaya for nearly six years. He has also been a visiting academic for extended periods at the National University of

Singapore as well as the University of Malaya and the National University of Malaysia. He is involved in several collaborative research programmes in plant reproductive biology with Malaysian academics and is a member of the editorial board of *Wallaceana* – a Malaysia-based bulletin for tropical ecology published by the International Association of Ecology (INTECOL).

LESLEY ROGERS

Professor Lesley Rogers holds a Personal Chair at the University of New England, Armidale, Australia. She has a strong international reputation in the field of brain development and behaviour and has made special contributions to the understanding of environmental influences on brain development and function. Together with her colleague Professor Gisela Kaplan, she is conducting research on the behaviour of orang-utans: their jointly authored book *Orang-utans in Borneo* was published by the University of New England Press in 1994. Lesley Rogers has published over 200 publications, including 4 books. She obtained her first degree at Adelaide University and a D.Phil. from Sussex University. In 1987 she was honoured by the award of Doctor of Science from the University of Sussex. She is Past President of the International Society for Comparative Psychology and co-edits the *International Journal of Comparative Psychology*.

1 Introduction

Amarjit Kaur & Ian Metcalfe
University of New England

It is four decades since Malaya achieved independence and thirty-three years since Malaysia was formed. The country has been transformed economically, socially, culturally and politically during this period. Notwithstanding the current economic crunch in Malaysia, how should we explain Malaysia's transformation in recent times? Economic theories provide one answer, but economic growth also depends on the relationship between the state and capitalist markets; the country's natural resource endowments; and its cultural and political preconditions. In this book an analysis of these factors is developed under three main themes: the nature of Malaysia's natural and human resource endowments; the relationship between society and the economy; and the interactions between a corporate culture and the culture of society at large.

The Shaping of Malaysia does not attempt to be exhaustive, and some issues are dealt with more fully than others. Before dealing with these issues, a brief outline of the geographical and political background is provided for the reader unfamiliar with Malaysia.

POLITICAL BACKGROUND

The modern state of Malaysia was formed in 1963 by the union of the Federation of Malaya, which had achieved independence from Britain in August 1957, the island of Singapore, which had been given internal self-government by Britain in 1958, and the territories of Sabah and Sarawak, which had been British crown colonies from July 1946. On 9 August 1965, Singapore was expelled from the new Federation and became a separate, independent state. Hence, since August 1965 Malaysia has comprised the eleven states of what was then called West Malaysia and the two Borneo states of East Malaysia (See Map 1.2). In the early 1970s, the official terminology changed to Peninsular Malaysia for the old Malaya and Sabah and Sarawak, allegedly after the secession of Bangladesh from Pakistan. In this book the term East Malaysia is used in its geographical sense.

GEOGRAPHIC LOCATION

Peninsular Malaysia forms part of the southern projection from the Asian mainland, with Thailand immediately to its north and the island of Singapore to the south. It has an area of 131 794 square kilometres and consists of eleven states: Perlis, Kedah, Penang, Perak, Selangor (with the Federal Capital Territory of Kuala Lumpur), Melaka, Johor, Negeri Sembilan, Pahang, Trengganu and Kelantan.

Sabah and Sarawak occupy the northern and northwestern coast of the island of Borneo. Sabah lies approximately between latitudes 4° and 7° North and longitudes 115° and 119° East. Sarawak lies between latitudes 0°50' and 5° North and longitudes 109°36' and 115°40' East. Together they occupy an area of 198 149 square kilometres (Sabah - 73 700; Sarawak - 124 449) in comparison to their neighbours, Brunei Darussalam (5765) and Kalimantan, Indonesia (539 460).

CLIMATE AND RAINFALL

Both Peninsular and East Malaysia have a uniformly warm and humid climate with temperatures ranging from 25.5°C to 33°C, except at high altitudes where the nights are considerably cooler. Seasonal changes are marked not by variations in temperature but by changes in rainfall, which in turn are related to the cycle of the monsoonal winds. The northeast monsoon, which sweeps down across the South China Sea, is the dominating air stream during November to January. It then gradually decreases in force with a transitional period in April to May followed by the southwest monsoon. Another transitional period occurs in October to November and the whole cycle then repeats. Throughout most of Malaysia the rainfall ranges from 2000mm to 4000mm per annum, although there is considerable variation between different regions. Nowhere is there a true dry season, but most areas receive more rainfall during certain periods in the year, the wettest season coinciding with the northeast monsoon.

THE PHYSICAL ENVIRONMENT

The landform of both the Malay Peninsula and Borneo is characterised by coastal plains giving way to a rugged mountainous interior. The spine of the peninsula is the Main Range, and there is a further block of highland covering most of upper Kelantan, inland Trengganu and Pahang. The peninsula's highest peak is Gunung Tahan (2207 metres). The interior mountains have always posed a formidable barrier to trans-peninsular

Map 1.1 Southeast Asia: Location of Peninsular Malaysia and East Malaysia

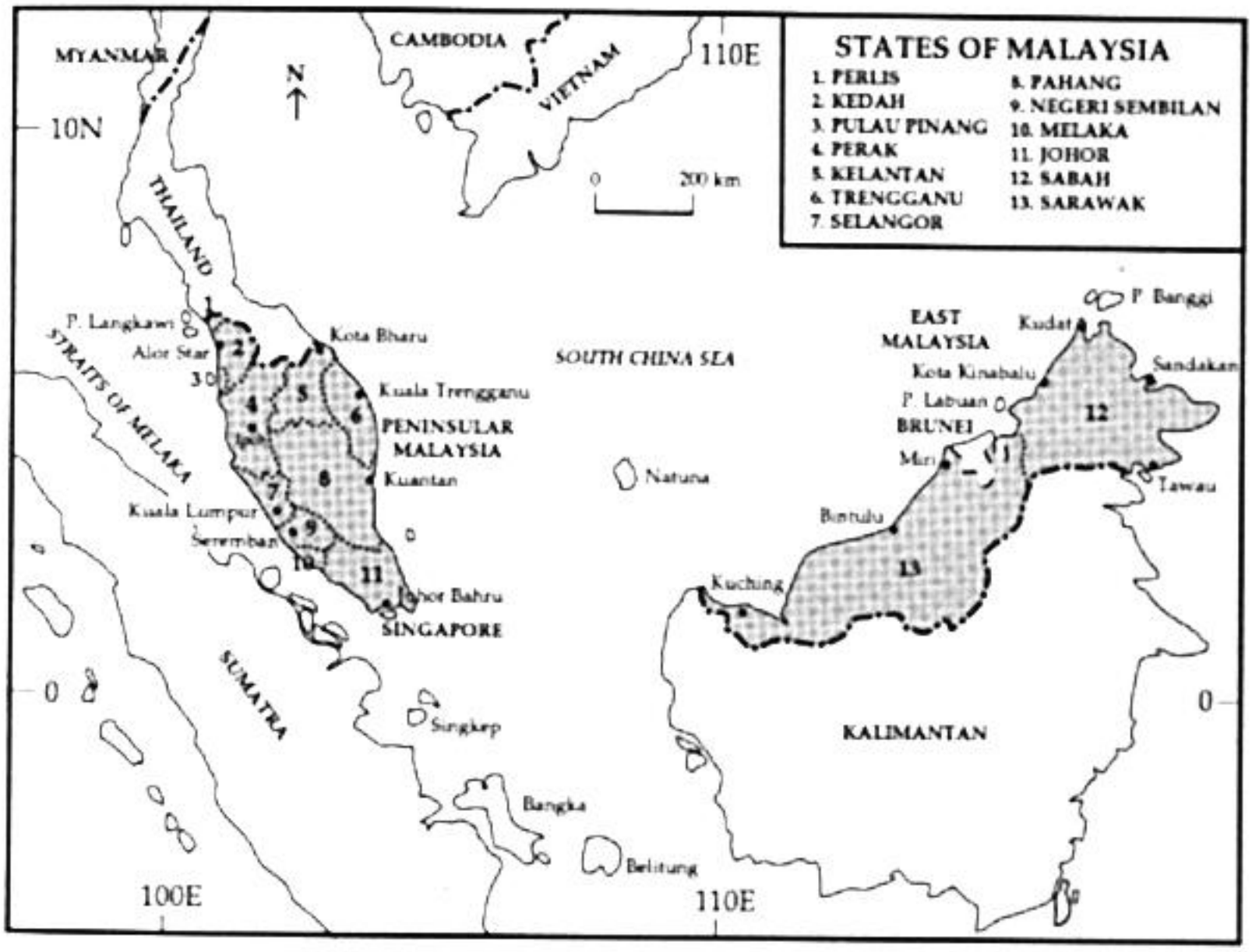
movement and the focus of settlement has been the coastal lowlands. From early times, political centres were established on the rivers which have their headwaters in the inland ranges. Most peninsular states derive their name from the principal rivers. In Borneo, the lowlands, often swampy alluvial plains, also form a belt along the coast. Behind these plains are the foothills leading inland up to a mountainous mass through which runs the border between Malaysian and Indonesian Borneo. The highest mountain in Borneo, and also in Southeast Asia, is Mount Kinabalu (4500 metres). The great rivers of Borneo, like those on the peninsula, were the original sites of settlement. The heavy rainfall and warm temperatures have resulted in Malaysia being covered by equatorial forest. Indeed, Borneo possesses one of the richest and most diverse flora and fauna on earth, and the trade in tropical timber represents a major export earner for Sabah and Sarawak. Along the plains most of the original forest cover has been removed to make way for settlement, physical infrastructure, commercial agriculture and industries.

POPULATION

In 1991, Malaysia's population was an estimated 18.4 million of which about 14.8 million live on the peninsula, while Sabah's population totalled 1.8 million and Sarawak's 1.7 million. In Peninsular Malaysia, the dominant ethnic group is the Malays. In Sabah, the dominant group is of Kadazan origin, while in Sarawak the Dayaks predominate. Both Peninsular and East Malaysia were land-abundant, labour-scarce economies and consequently immigration has been an important factor underlying population growth in the nineteenth and early twentieth centuries.

POLITICAL PATTERNS

The British colonial authorities fostered the incorporation of the independent Borneo territories with Malaya and Singapore to form the Malaysian Federation. Initially, there was considerable apprehension in Sabah and Sarawak, resulting in the formation of a number of political parties structured along communal lines. Nevertheless, early opposition to the Federation by East Malaysian leaders soon faded, largely because Malaya was prepared to make a number of important concessions and also because Sabah and Sarawak were concerned over the aggressive stance adopted towards them by Indonesia and the Philippines. Over the years there has been an underlying tension in the relations between the federal government in Kuala Lumpur and the state governments of Sabah and Sarawak. In essence the tension has derived from the notably lower level



Map 1.2 States of Malaysia

of economic development and political sophistication in Sabah and Sarawak. On the whole, smooth federal-state relations have been guaranteed because the federal government has continued to ensure the supremacy of those political leaders who co-operate fully with it.

Nevertheless, the preservation of the country's unity and the welding of a truly unified nation has preoccupied Malaysia's leaders since 1957. In 1991, for example, the current Prime Minister, Dr. Mahathir Mohamad, introduced his *wawasan 2020* or Vision 2020, whereby he wants Malaysia to be an advanced industrialised country by the year 2020. Sustained economic growth and a united society are thus seen to be key elements in Malaysia's path to modernisation. But these need to be understood in the context of the country's natural and historical heritage and *The Shaping of Malaysia* is a modest attempt to place Malaysia's natural and human resource endowments, together with economic, social and political developments, in larger perspective.

THE BOOK

The second chapter is by Ian Metcalfe who, using his extensive experience as a researcher on the geology, tectonic evolution and palaeogeography of Malaysia and Southeast Asia, traces the ancient geological origins of Malaysia and the origins and occurrence of the country's geological resources. He shows how Peninsular Malaysia originated following the collision of two continental masses derived from the ancient supercontinent Gondwanaland in the southern hemisphere which were originally separated by a wide ocean, the Palaeo-Tethys ocean. Remnants of this ancient ocean now remain as a narrow exposed zone in the Malay Peninsula. During the collision of these continental masses around 230 to 210 million years ago, the Main Range tin-bearing granites (which currently form the mountainous 'backbone' of Peninsular Malaysia) were intruded which ultimately led to the alluvial tin mineralisation which has featured so prominently in the early economic development of Malaysia. Metcalfe also shows how the alluvial tin deposits essentially formed to the west of the main range granite 'backbone' of the peninsula, resulting in the uneven economic and infrastructural development of Peninsular Malaysia.

Sabah and Sarawak, lying on the north western part of the island of Borneo, essentially 'grew out of the ocean' during the last 65 million years and form part of a large body of oceanic rocks with small microcontinents that have accreted to the more ancient continental 'core' of Borneo, the South West Borneo Block. Coal and hydrocarbon resources of Malaysia have also played an important role in the country's economy. Coal in Sabah and Sarawak still has a significant potential revenue, but

coal deposits once mined and important in Peninsular Malaysia, are now essentially worked out. In recent decades, petroleum (oil and natural gas) have become increasingly important as a revenue earner and Metcalfe discusses the origin, occurrence and reserves of these accumulations. He also shows how the development of the Cenozoic sedimentary basins that 'house' the deposits had their origins in the interaction of the India-Australia, Pacific and Eurasian tectonic plates and in particular as a consequence of the collision of India with Eurasia. The various changes in continent-ocean configurations and in the distribution of land and sea in the Southeast Asian region outlined by Metcalfe also provide the necessary background to understanding the present day distribution and occurrence of plants and animals in Malaysia and Southeast Asia.

Nallamilli Prakash (Chapter 3) examines Malaysia's incredible diversity of plant wealth, drawing on his extensive research on the flora of Malaysia. He shows how plants are very important to the cultural and economic life of the indigenous people who traditionally have had an extensive knowledge of forests and plants. Moreover, the Malaysian forests, in their great diversity and luxuriance, are also a treasure house of various useful products such as timber, fruits and drugs and are among the most diverse and complex of the world's rainforests. About 60 per cent of the Malaysian land area is still covered by vegetation, but rapid population growth and urbanisation is putting enormous pressure on the country's plant wealth—both natural and cultivated. Prakash believes that while the Federal Government recognises the need for conservation in the utilisation and management of the country's natural resources and has a sustainable forest management policy in place balancing the environmental and economic needs, its implementation of the programme is perceived to be somewhat compromised due to commercial pressures.

He also demonstrates that a notable feature of the Malaysian flora is its extreme species richness but that only a few individuals of each species are present in a given area. The highly sought-after timber trees, the dipterocarps, are particularly well-represented in the Malaysian flora. Their growth rates vary considerably among the species and in some it may be 60 years before the first flowers are borne. He concludes that Malaysian tropical forests, like those elsewhere, are being depleted at an alarming rate; programs for reforestation are based on insufficient local research; and there is a possibility that a high proportion of native plant species will become extinct, along with their associated fauna, even before botanists get around to naming them, let alone assessing their potential usefulness.

In her chapter, Lesley Rogers examines the evolution of the fauna of Malaysia, focusing on the orang-utan. She traces the evolution of the orang-utan and its spread into Southeast Asia and on to Sumatra and Borneo. The distribution and importance of other animals in the Malaysian forest is also included and she stresses that the rainforests of Southeast Asia have the most diverse collection of animal species known

to occur anywhere. The interaction of the orang-utan with other animal species and plants is discussed with a view to understanding the dependence of orang-utans on the rainforest. The special importance of the orang-utan is considered in terms of its evolution and proximity to humans, both genetically and in its ability for complex thought. The migration of the orang-utan from its evolutionary origins on the Asian mainland to East Malaysia and the rest of Borneo, Sumatra and Java is also traced in detail in the chapter. Rogers draws here on recent research on the palaeogeographic evolution of the region and the changing climate and land-sea distribution. The chapter concludes with an account of the presently declining numbers of orang-utan and other fauna in Malaysia resulting from deforestation, and a plea for the protection of habitats with their complete diversity of flora and fauna, rather than a species here and there in 'protected' habitats.

Alberto Gomes' chapter on Peoples and Cultures begins with a discussion of the peopling of modern Malaysia as a multiethnic and multicultural nation from the early Hoabinhian inhabitants about 2000 years ago through to the Neolithic humans, the Orang Asli and then to the settlement by the Malays followed by the Chinese and Indians in colonial times. He then goes on to examine the Malaysian cultural mosaic and stresses that there are many culturally variegated sub groups within the main ethnic groups of Malaysia. He also analyses the Malaysian 'typical plural society' as a legacy of the British colonial 'divide and rule' policy that left an indelible mark on Malaysian society. After independence, ethnicisation and communalism, coupled with disruption of Malay dominance in the political realm and non-Malay dominance of the commercial sector, led to a shift of some political power away from the Malays. Subsequently, following the 13 May 1969 racial riots, the Government introduced the New Economic Policy (NEP) and the National Culture Policy (NCP) to 'foster ethnic peace and social justice in the country'. Gomes then goes on to consider how overzealous implementation of the NEP has led to ethnic chauvinism and ethnic polarisation in Malaysia, and then discusses the NCP and other cultural aspects of Malaysian society. He concludes with an account of Mahathir's Vision 2020, a new goal of nation building for Malaysia as an industrialised country with a truly united *Bangsa Malaysia* (Malaysian 'race').

Chapter 6 by Cheah Boon Kheng outlines political development from Colonial Rule to Mahathir. He asserts that although Malaysia has a parliamentary democracy, the political system reflects the political dominance of the Malays and their control of the administration as indigenous 'masters' of the country. He also examines the genesis of Malaysia's multi-racial society, the growth of constitutional government, nationalism, and the relationship between society and politics. The second part of his paper details the political contributions made by the first four

prime ministers – Tunku Abdul Rahman, Tun Abdul Razak, Tun Hussein Onn and Datuk Seri Dr Mahathir Mohamad. He concludes with an assessment of the role of the prime minister in Malaysia and the inherent tensions in a multi-racial society.

In Chapter 7 Amarjit Kaur takes a long term view of economy and society in Malaysia. While the main focus is on economic change prior to World War II, the chapter also links the post-World War II period with the Malaysian period (1963 onwards). Her comparative study of both Peninsular and East Malaysia highlights the following patterns of growth. Firstly, although Sabah and Sarawak were administered as a Chartered Company territory and a private colony respectively, they had similarities with Malaya in their patterns of development. By 1940 the two territories were much closer to Malaya than they had been at the beginning of the twentieth century and had also been incorporated into the world economy. Secondly, during the short colonial period, the British implemented planned economic development in all three regions, so that by the time of the formation of Malaysia, these three regions had many economic frameworks in common. The crux of the chapter is that although the Malaysian economy has been transformed significantly since 1963, there is uneven economic development both in Peninsular Malaysia and between Peninsular and East Malaysia. This disparity can be traced back to the period under colonial rule when economic and social structures were shaped by the resource endowments, infrastructural development and the economic orientation of the respective territories. This external orientation also resulted in the migration of mainly Chinese and Indian workers to Malaysia and colonial labour policy thus left its mark on the ethnic composition of Malaysia's present society.

Chapter 8 by Gisela Kaplan examines Malaysia's impressive economic record over the past decade and focusses on the timber industry and ecotourism as two incompatible economic activities, especially in East Malaysia. She begins her chapter with an account of the timber sector in East Malaysia and the impact of logging on the economy. She then details Malaysia's emergence as an important tourist destination in the Southeast Asian region and ascribes this in part to ecotourism. Her chapter concludes with an assessment of deforestation's impact on the flora and fauna of Malaysia. Focussing on the orang-utan, the subject of her extensive research for a number of years, Kaplan states that while some species of fauna are more tolerant to logging than others, the orang-utan does not fall into this category, and that discovering 'paradise' through ecotourism 'belongs to the contradictions of development and symbolises the environmental tragedies of the twentieth century'.

In Chapter 9 John Drabble examines Malaysia's twentieth century economic transformation. He begins with a discussion of Malaysia's role as an export economy providing the world market with products such as rubber, tin, palm oil, timber, pepper and petroleum and outlines the

openness of the Malaysian economy. As late as 1970 primary exports still comprised 32 per cent of Malaysia's GDP. However in the ensuing quarter century, 'a transition has been effected to an industrial structure which has brought the country near to Newly-Industrialised Country (NIC) status'. By 1990 nearly 27 per cent of GDP came from the manufacturing industry. Thus, while the economy remains export-oriented, manufactured goods are increasingly occupying the leading position. He argues that this transition has been 'comparatively smooth and straightforward' and to a large extent, Malaysia's 'luck' has come from exogenous factors – international trade and markets, foreign investment, foreign labour which made it possible to avert bottlenecks in the development process, and new industries replacing those that had tailed off. Where endogenous factors are concerned, resource endowments, a relatively small population, and the state's role in ensuring development were crucial to the transformation process. He concludes that political continuity and stability, coupled with openness to foreign factors of production, have made Malaysia a particularly 'lucky' country.

Collectively, therefore, the chapters make an important contribution to an understanding of the factors that have shaped and are currently shaping Malaysia.

2 Geological Origins and Natural Resources

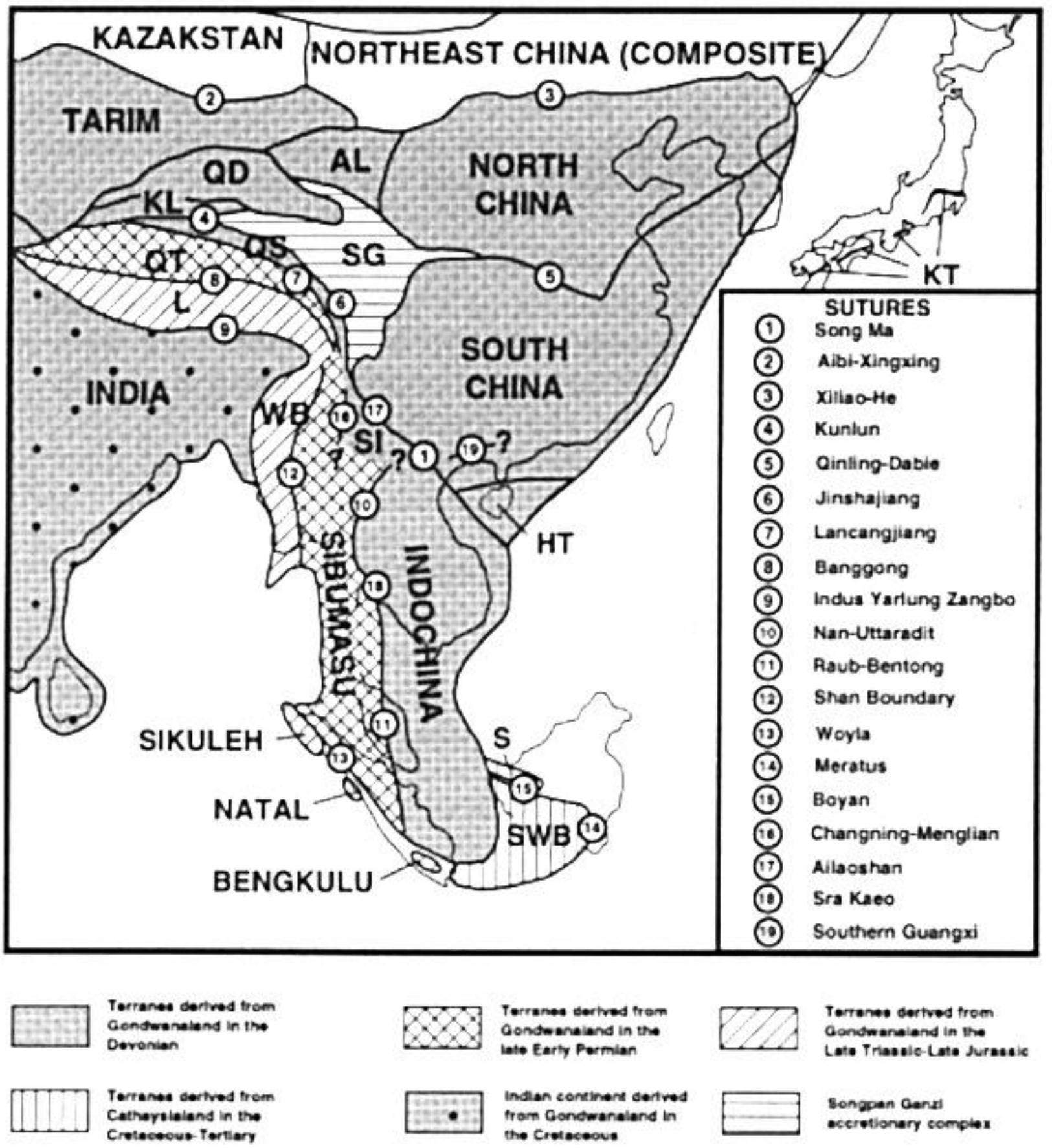
Ian Metcalfe
University of New England

Malaysia has had a very long and complex geological history. In order to understand the geological origin and evolution of Malaysia, we must consider this in the context of the overall evolution of East and Southeast Asia and within a framework of global tectonics.

Zones of allochthonous crustal and lithospheric fragments, now far removed from their original sites of origin, occur around the world's major oceans. The recognition of such displaced or suspect *terranes* in the North American Cordillera[1] led to the concept of 'terrane analysis'.[2,3] The displaced terranes generally comprise continental fragments, island arcs, accretionary complexes, ophiolites and oceanic sea mounts and plateaus that were carried by spreading oceanic plates and accreted to continental cratons at convergent plate boundaries. Studies of orogenic collages and terrane analysis in the Tethyan region and Pacific margins have led to much recent debate concerning the global evolution of Gondwanaland, Pangaea, Tethys and Panthalassa (Palaeo-Pacific). The debates have mainly concerned the nature of the ancient Tethys ocean (a wide single ocean or a succession of narrower oceans or seas[4,5] and the rift-drift-amalgamation/accretion history of terranes.[4,6–16]

Geographic distributions of faunas, floras and natural resources in East and Southeast Asia show complex and evolving patterns with time that are the result of geological plate movements, shifting land/sea and continent/ocean configurations, shifting coastlines, and changing palaeoclimates and environments. Movements of continents and continental fragments and the development and destruction of oceanic basins during the evolution of the Southeast Asian region has resulted in the creation of valuable mineral and fossil fuel resources, the creation and destruction of biogeographic barriers at various times, and the development, and disappearance of faunal and floral provinces. The dispersal and evolution of faunas and floras of Southeast Asia is intimately linked with the geological evolution of the region. The often unique and diverse faunas and floras, and their current distribution, and the occurrence of mineral, hydrocarbon and coal deposits, are the direct or indirect result of the geological origins and evolution of the region.

East and Southeast Asia is a composite of allochthonous terranes located at the zone of convergence between the Indo-Australian, Eurasian



Map 2.1 Distribution of principal continental terranes and sutures of East and Southeast Asia.

WB = West Burma, SWB = South West Borneo, S = Semitau Terrane, HT = Hainan Island terranes, L = Lhasa Terrane, QT = Qiangtang Terrane, QS = Qamdo-Simao Terrane, SI= Simao Terrane, SG = Songpan Ganzi accretionary complex, KL = Kunlun Terrane, QD = Qaidam Terrane, AL = Ala Shan Terrane, KT = Kurosegawa Terrane.

and Philippine Sea/Pacific plates. Mainland East & Southeast Asia is a giant 'jigsaw puzzle' of continental blocks and fragments that are bounded by major geological discontinuities that represent the sites of former ocean basins (Map 2.1). Some of these major discontinuities are now huge strike-slip faults, whereas others are actual suture zones that include remnants of oceanic crust (ophiolites), oceanic and continental-margin sedimentary rocks, accretionary complexes, mélange and sometimes volcanic arcs. Eastern Southeast Asia comprises a complex assemblage of continental fragments, stretched continental crust, subduction complexes, island arcs and small ocean basins (Map 2.2). The continental fragments of eastern Southeast Asia appear to be derived from the South China-Indochina margin[17-19] and from the Papua New Guinea – North Queensland margins of Australia.[8, 20]

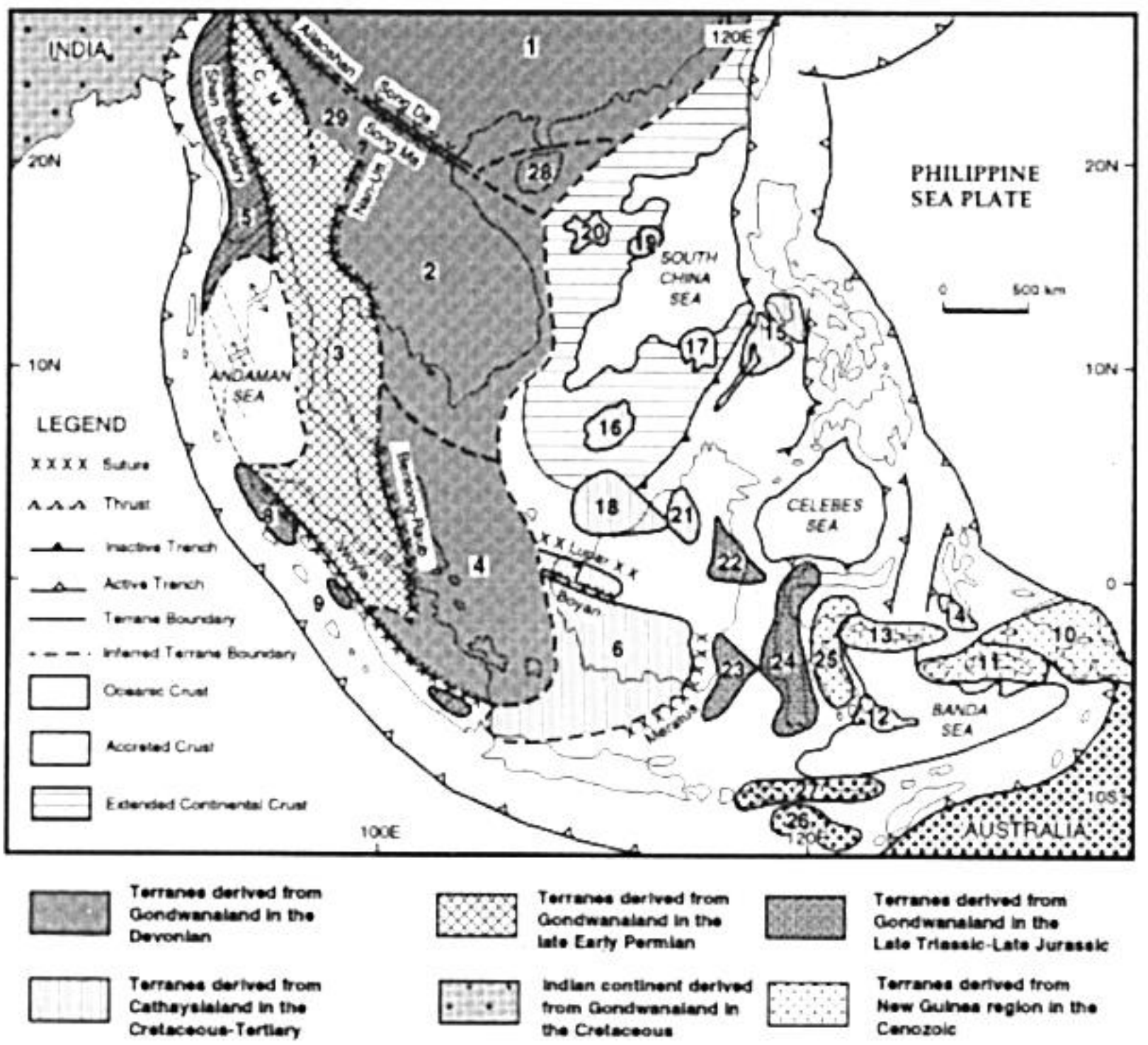
The various continental fragments (terranes) of the region have progressively assembled over the last 400 million years. During this time, major tectonic movements, continental collisions, volcanic activity, basin development and evolution, and major fluid movements have led to the creation of Malaysia's mineral and fossil fuel wealth.

GEOLOGICAL ORIGINS

Mainland Southeast Asia comprises five major continental terranes, South China, Indochina, Sibumasu, West Burma and South West Borneo, which are bounded by major tectonic faults and lineaments or by sutures (representing former oceans) now recognised along mobile belts by ophiolites, accretionary complexes and volcano-plutonic arcs (Map 2.1).

All the mainland East & Southeast Asian continental terranes are interpreted to have had their origin on the margin of the ancient supercontinent Gondwanaland, and probably on the India-N/NW Australian margin.[9, 10, 12, 15, 16, 21, 22] Multidisciplinary data suggests that the East and Southeast Asian terranes were successively rifted and separated from Gondwanaland as three continental slivers[15, 16] in the Devonian (380 million years ago), late Early Permian (265 million years ago) and Late Triassic-Late Jurassic, (220–150 million years ago). The separation of these slivers of continent was accompanied by the opening (and subsequent closing) of three ocean basins, the Palaeo-Tethys, Meso-Tethys and Ceno-Tethys, remnants of which are now to be found along the various suture zones of eastern Asia. The continental terranes of East and Southeast Asia have progressively sutured (collided and joined) to one another during the Late Palaeozoic to Cenozoic (last 350 million years). Most of the major terranes had coalesced by the end of the Cretaceous (65 million years ago) and proto Southeast Asia had formed. In the Late Cretaceous (around 80 million years ago), the SW Borneo block rifted and

separated from the margin of the Indochina block opening the Proto-South China Sea as a back-arc basin.



Map 2.2 Distribution of continental blocks and fragments (terranes) and principle sutures of Southeast Asia (modified after Metcalfe, 1990[10]).

1. South China 2. Indochina 3. Sibumasu 4. East Malaya 5. West Burma 6. S.W. Borneo 7. Semitau 8. Sikuleh 9. Natal 10. West Irian Jaya 11. Buru-Seram 12. Buton 13. Bangai-Sula 14. Obi-Bacan 15. North Palawan 16. Spratley Islands-Dangerous Ground 17. Reed Bank 18. Luconia 19. Macclesfield Bank 20. Paracel Islands 21. Kelabit-Longbawan 22. Mangkalihat 23. Paternoster 24. West Sulawesi 25. East Sulawesi 26. Sumba 27. Banda Allochthon 28. Hainan Island terranes 29. Simao terrane.

Cenozoic modification of Southeast Asia (last 65 million years) included substantial strike-slip faulting and block rotations, consequent upon the collision of India and Eurasia; the opening of the Andaman and South China Seas; the closing and destruction of the Proto-South China Sea, and development of the important oil and gas-bearing basins of the region. Current debate centres on whether these modifications were due to 'extrusion tectonics'[23,24] or due to the region forming a part of a huge dextral mega shear zone.[25,26]

Peninsular Malaysia

Peninsular Malaysia straddles two of the large Southeast Asian continental terranes, western Peninsular Malaysia forming part of the Sibumasu terrane and eastern Peninsular Malaysia forming part of the Indochina terrane. The ancient Palaeo-Tethys ocean which once separated these two continental terranes by thousands of kilometres is now represented by a narrow (20 km wide) zone of oceanic sediments, ophiolitic rocks (remnants of oceanic crust) and subduction-related accretionary complex rocks (Map 2.3). Recent studies[27-32] suggest that the Palaeo-Tethys ocean represented in Peninsular Malaysia opened in Late Devonian times (around 350 million years ago) and closed (with collision of the Sibumasu and Indochina blocks) in the Triassic (around 240 million years ago).

Western Peninsular Malaysia, together with northwest Sumatra, western Thailand, eastern Burma (Myanmar) and parts of western Yunnan, forms part of an elongate continental fragment called Sibumasu[33] (see Maps 2.1 & 2.2) which formed part of the ancient southern hemisphere supercontinent Gondwanaland from the Late Proterozoic (700 million years ago) to the late Early Permian (265 million years ago). Figures 2.1 and 2.2 show palaeogeographic reconstructions of northern Gondwanaland in the Cambro-Ordovician (495 million years ago) and Middle to Late Silurian (430 million years ago) illustrating the positions of the various East and Southeast Asian continental terranes on the India-Australian margin of Gondwanaland forming a 'Greater Gondwanaland'. Distributions of land and sea are also shown, together with the distribution of some shallow-marine fossils that provide links between the Asian blocks and Australia at these times.[21]

Eastern Peninsular Malaysia, together with eastern Thailand, Cambodia, Laos and most of Vietnam, forms part of the Indochina continental terrane, which rifted and separated from the margin of Gondwanaland (together with North China, South China and the Tarim terrane) about 350 million years ago in Devonian times, opening the Palaeo-Tethys ocean between these separating fragments and

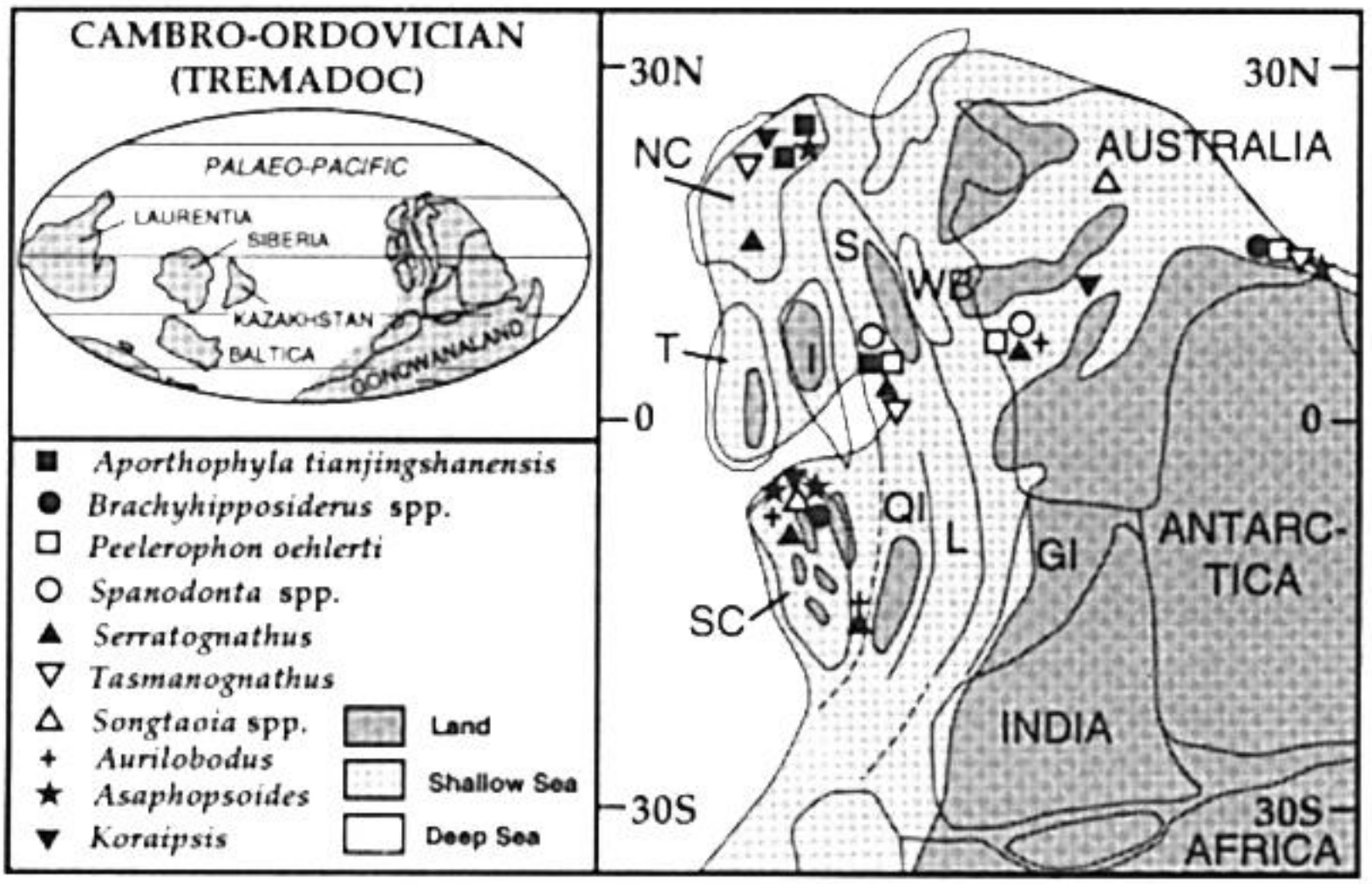


Figure 2.1 Reconstruction of eastern Gondwanaland for the Cambro-Ordovician (Tremadoc) showing the postulated positions of the East and Southeast Asian terranes, distribution of land and sea, and shallow-marine fossils that illustrate Asia-Australia connections at this time.

NC = North China; SC = South China; T = Tarim I = Indochina; Qi = Qiangtang; L = Lhasa; S = Sibumasu; WB = West Burma; GI = Greater India. Present day outlines are for reference only. Distribution of land and sea for Chinese blocks principally from Wang (1985). Land and sea distribution for Pangea/Gondwanaland compiled from Golongka *et al.* (1994), Smith *et al.* (1994); and for Australia from Struckmeyer & Totterdell (1990).[44,45,46]

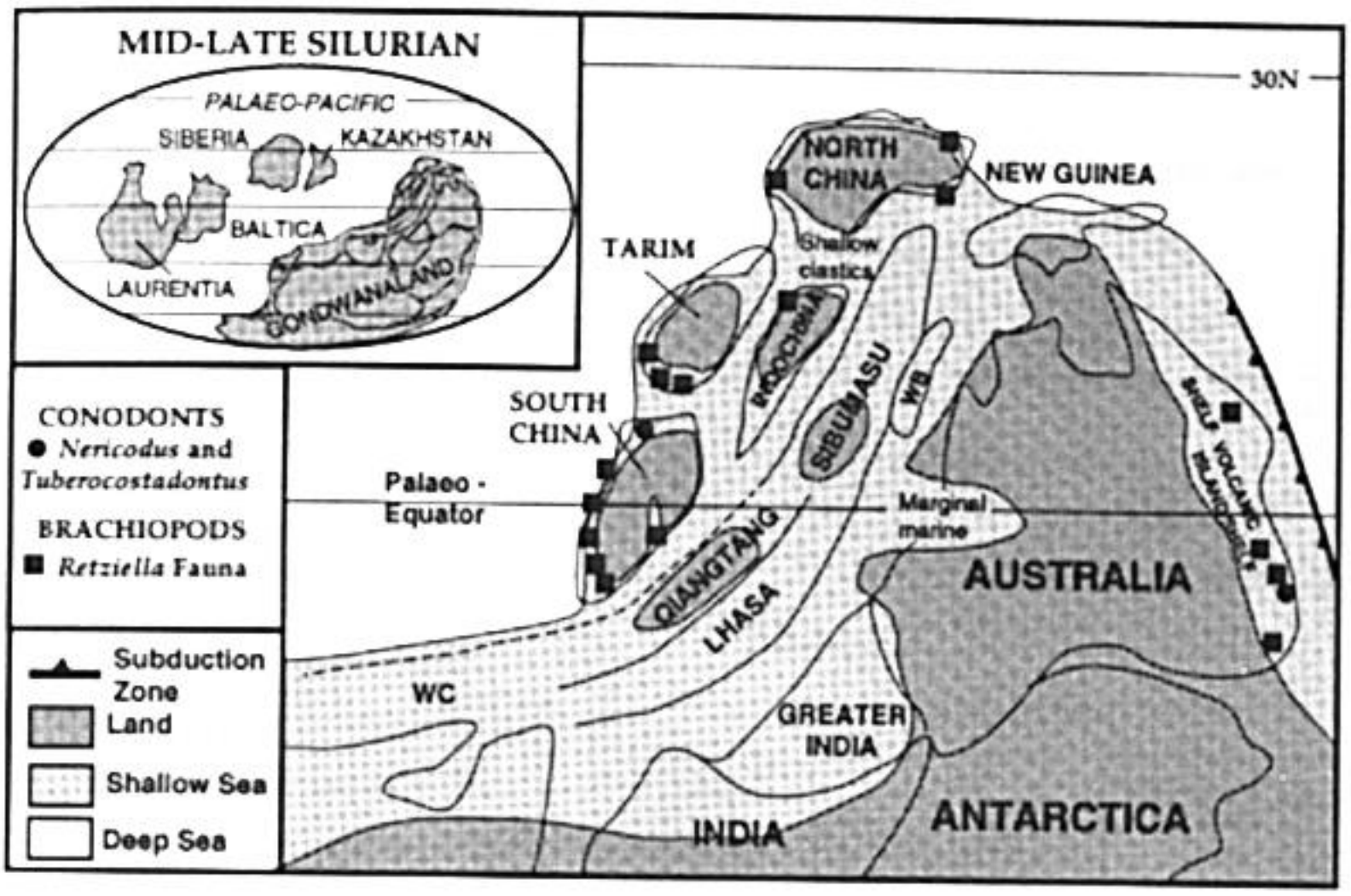


Figure 2.2 Reconstruction of eastern Gondwanaland for the Mid-Late Silurian showing the postulated positions of the East and Southeast Asian terranes, distribution of land and sea, and shallow-marine fossils that appear to define an Australasian province at this time.

WC = Western Cimmerian Continent; WB = West Burma. Present day outlines are for reference only. Distribution of land and sea for Chinese blocks principally from Wang (1985). Land and sea distribution for Pangea/Gondwanaland compiled from Golongka *et al.* (1994), Smith *et al.* (1994); and for Australia from Struckmeyer & Totterdell (1990).[44,45,46]

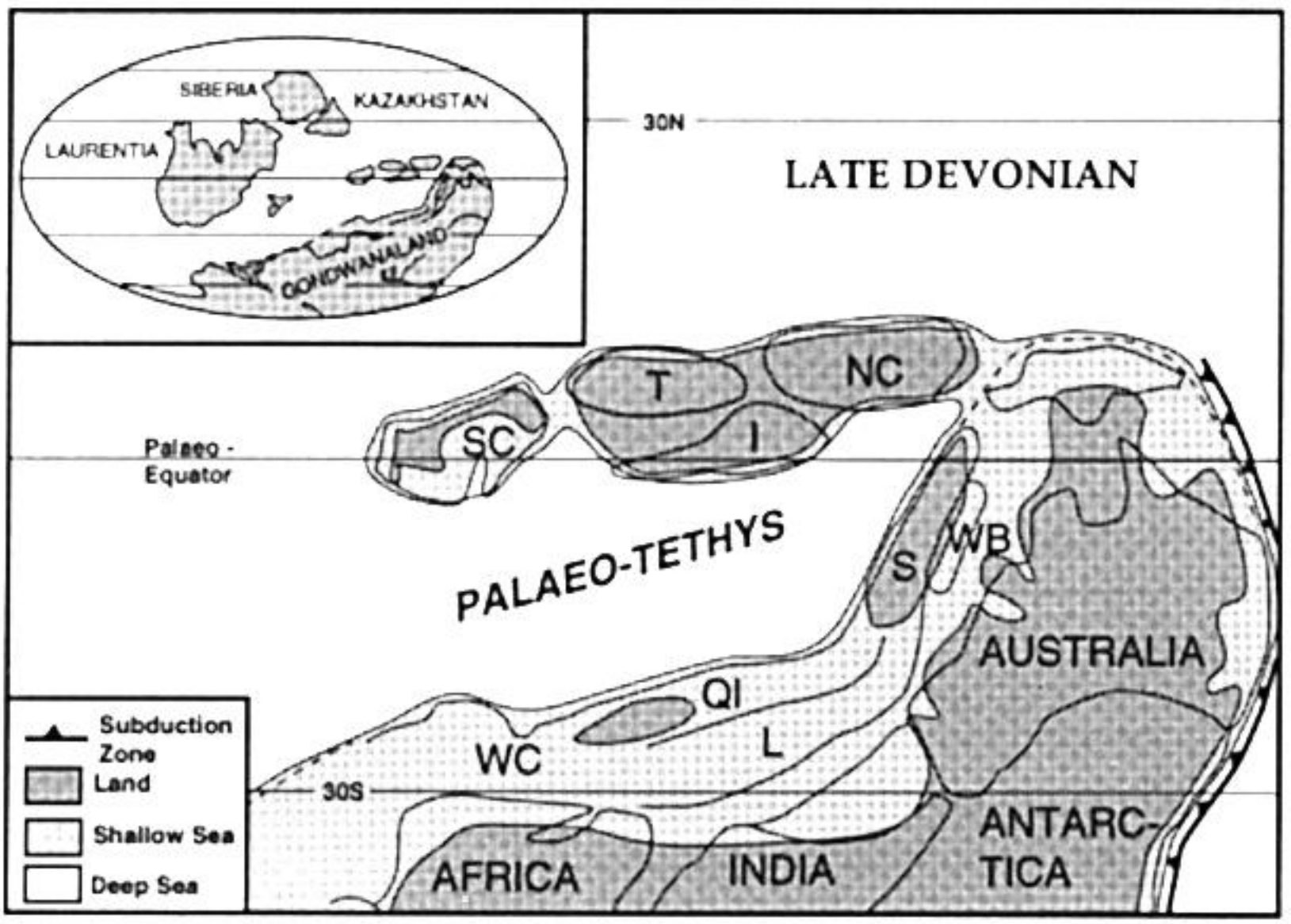
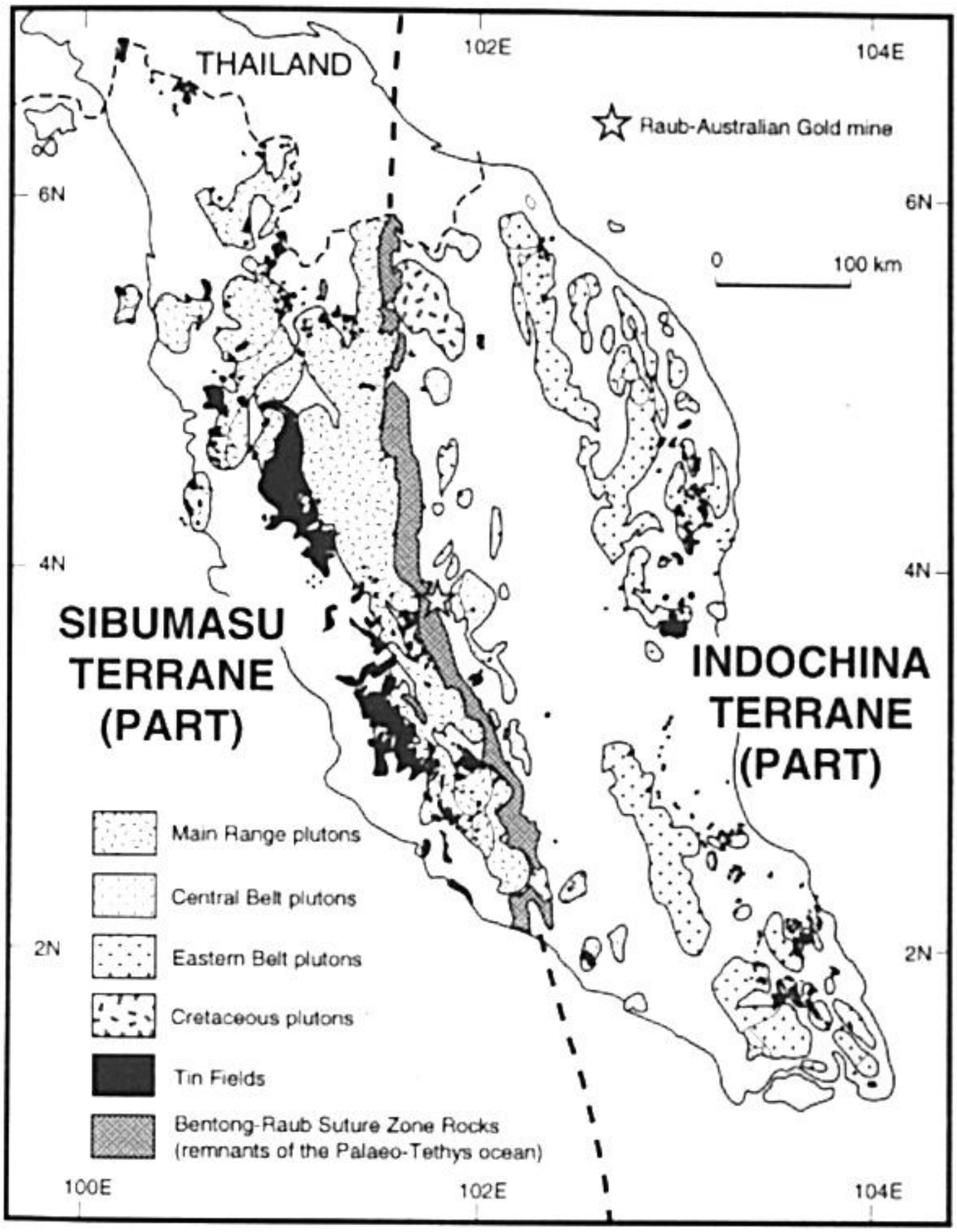


Figure 2.3 Reconstruction of eastern Gondwanaland for the Late Devonian showing the postulated positions of the East and Southeast Asian terranes, distribution of land and sea, and opening of the Palaeo-Tethys ocean at this time. Present day outlines are for reference only. Distribution of land and sea for Chinese blocks principally from Wang (1985). Land and sea distribution for Pangea/Gondwanaland compiled from Golongka *et al.* (1994), Smith *et al.* (1994); and for Australia from Struckmeyer & Totterdell (1990).[44,45,46] Symbols as for Figures 2.1 and 2.2.



Map 2.3 Peninsular Malaysia: Granite plutons, Bentong-Raub Suture Zone rocks, tin fields, and the location of the Raub-Australian Gold Mine. Note how closely related the tin fields are to the Main Range granite plutons.

Gondwanaland (Figure 2.3). Indochina collided with South China about 350 million years ago in the Early Carboniferous (Figure 2.4a). During Late Carboniferous and Early Permian times, 320–270 million years ago (Figure 2.4b), Gondwanaland suffered extensive glaciation and glacial-derived sedimentary rocks were deposited along the northeastern margin of Gondwanaland, including the western Peninsular Malaysia part of Sibumasu, and faunas/floras were of cold-water/climate Gondwanaland types. Faunas and floras of the Eastern Peninsular Malaysia part of Indochina were, in contrast, warm tropical Cathaysian types at this time reflecting the equatorial position of Indochina/South China.[9,15] By this time, the southern hemisphere Gondwanaland had also collided and amalgamated with Laurentia, Siberia and Kazakhstan of the northern hemisphere to form the global supercontinent Pangea. In late Early Permian times, around 270 million years ago, the Cimmerian continental sliver separated from the northeastern Gondwanaland part of Pangea and drifted rapidly northwards, opening the Meso-Tethys ocean behind it and destroying the Palaeo-Tethys ocean to the north by subduction beneath Indochina/South China, north China and Laurasia (Figure 2.4c). The branch of the Palaeo-Tethys ocean between Sibumasu (including western Peninsular Malaysia) and Indochina (including eastern Peninsular Malaysia) narrowed, and by Late Triassic times (220 million years ago) western and eastern Peninsular Malaysia (Sibumasu and Indochina) had collided and the Palaeo-Tethys ocean had been closed, with only remnants of this ocean basin being preserved along the Bentong-Raub suture zone (Figure 2.4d). 'Proto-East and Southeast Asia' was already formed at this time. During the collision of Sibumasu and Indochina, large volumes of tin-bearing granite magma were produced by melting of the continental crust and these granites were intruded along the central axis of what is now the Malay Peninsula. These granites now form the Main Range granite mountains, the 'back bone' of Peninsular Malaysia. These granites were also the source of the main tin mineralisation of Peninsular Malaysia which was so important to the early economic development of the country (see below and Chapter 7).

East Malaysia (Sabah & Sarawak)

East Malaysia (Sabah and Sarawak) forms, together with Brunei, the north-west part of the Island of Borneo, the remainder of the island being Indonesian Kalimantan. The southwest part of Borneo is underlain by the South West Borneo continental block (Map 2.4) which was derived from the margin of the Indochina terrane by back-arc spreading in the Cretaceous and it had reached its present relative position forming the southeast margin of Sundaland by Middle-Late Cretaceous times (Figure 2.5c).

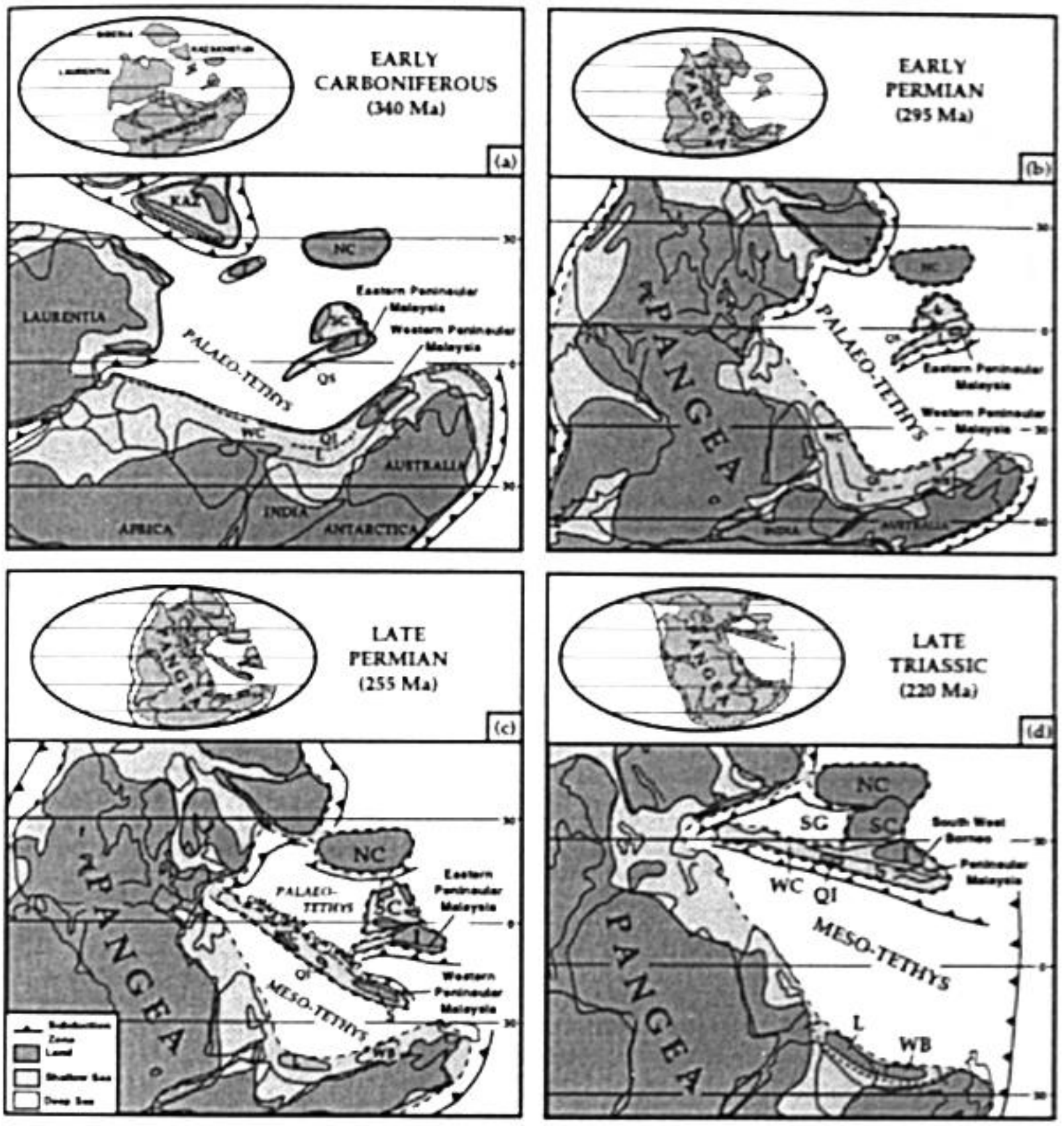
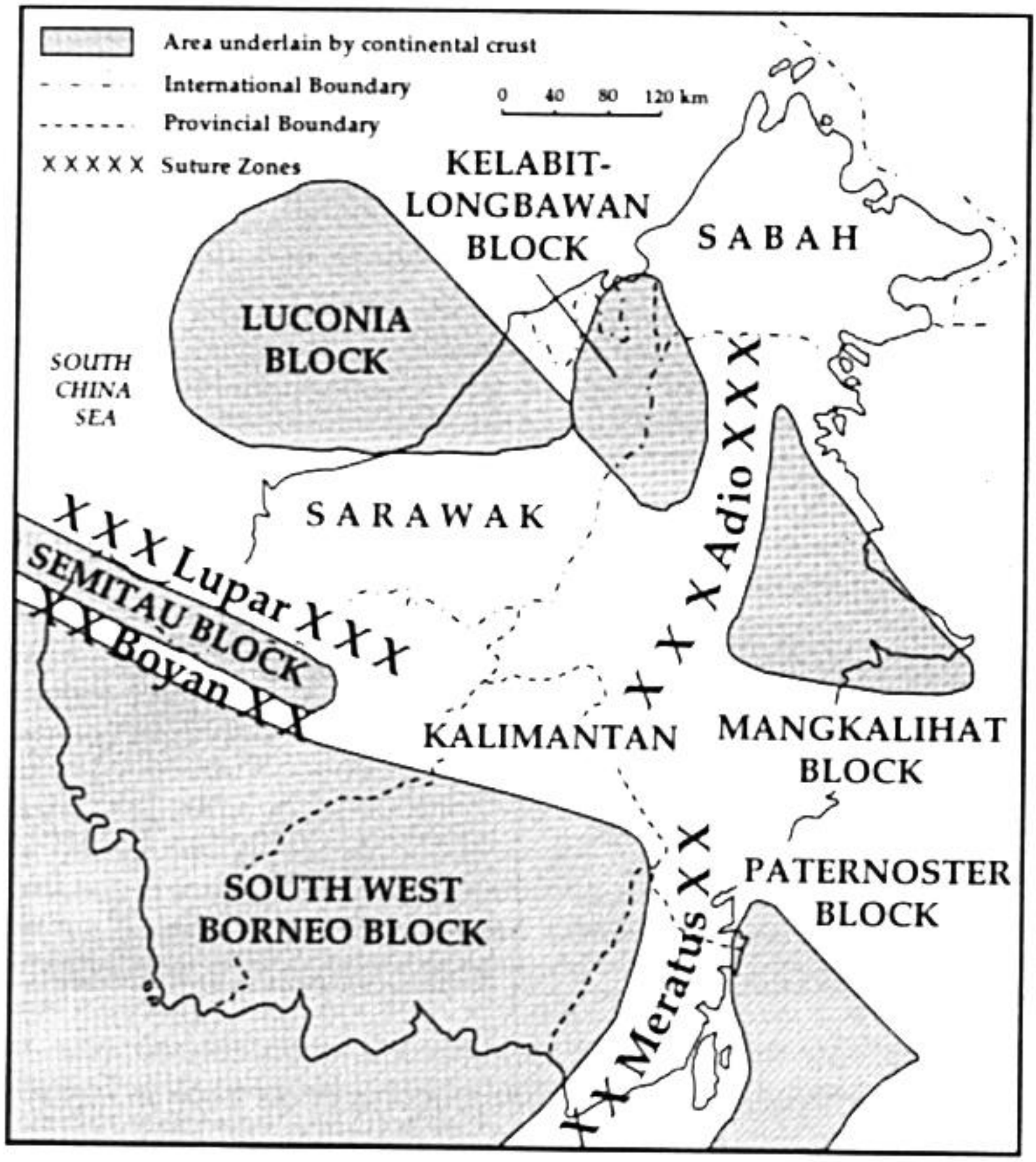


Figure 2.4 Palaeogeographic reconstructions of the Tethyan region for (a) Early Carboniferous, (b) Early Permian, (c) Late Permian and (d) Late Triassic showing relative positions of the East and Southeast Asian terranes and distribution of land and sea. Present day outlines are for reference only. Distribution of land and sea for Chinese blocks principally from Wang (1985). Land and sea distribution for Pangea/Gondwanaland compiled from Golongka *et al.* (1994), Smith *et. al.* (1994); and for Australia from Struckmeyer & Totterdell (1990).[44,45,46] Symbols as for Figures 2.1 and 2.2.



Map 2.4 Borneo: Continental fragments and suture zones.

The subsequent history and formation of Borneo involved the accretion of both small continental blocks and oceanic material to the southeast margin of Sundaland as the Pacific and Proto-South China Sea plates subducted beneath Sundaland to the west and south respectively. As the Proto-South China Sea plate subducted southwards beneath South West Borneo in the Cretaceous, a small continental fragment, the Semitau block, that now underlies southeast Sarawak and probably derived from Indochina, was accreted to Sundaland in the Late Cretaceous along the Boyan suture. At around the same time, material was accreted to the southeast margin of the South West Borneo block along the Meratus suture, including oceanic and ophiolitic material and continental crust represented by the Paternoster block[34] and material that now forms the western part of Sulawesi (following the opening of the Makassar Strait in the Eocene – see Figures 2.5 and 2.6).

Most of central Sarawak, almost all of Sabah and central Kalimantan comprise early Cenozoic deep-marine sedimentary rocks, and ophiolites representing oceanic crust, that have 'grown out of the ocean' by subduction-accretion processes, overlain by Late Cenozoic shallow-marine or continental deposits. By Middle Oligocene times (30 million years ago) accretion and uplift of the Early Cenozoic deep-marine sedimentary rocks had formed land where present day Sarawak and south Sabah are located (Figure 2.6). Further accretion and uplift produced an elongate mountain range now located along the Sarawak-Kalimantan border and in Sabah (Crocker Range) which formed a natural barrier between SE and NW Borneo. In Early to Middle Miocene times (20–15 million years ago) the Luconia and Kelabit-Longbawan small continental fragments, which had been drifting south consequent upon southwards subduction of the proto-South China Sea and opening of the present day South China Sea, reached their present positions by colliding with the uplifted accretionary complex rocks (Figure 2.6). The famous Mount Kinabalu in Sabah, the highest mountain in Southeast Asia, is an intrusive granitoid batholith emplaced in the Late Miocene (about 10 million years ago) due to post-orogenic crustal thickening. The variations of land/sea/mountains during the evolution of Malaysia and adjacent areas of Southeast Asia have profoundly influenced the dispersal and evolution of the animals and plants of the region.

GEOLOGICAL RESOURCES

The principal geological resources of Malaysia include important metalliferous mineral deposits, and fossil fuels in the form of oil, gas and coal. To date, the most important resources have been tin (often associated with tungsten), gold and other base metals, and hydrocarbons (oil and gas). In fact, it is oil and gas that have now taken over as Malaysia's chief revenue earner (over tin, rubber, and oil palm).

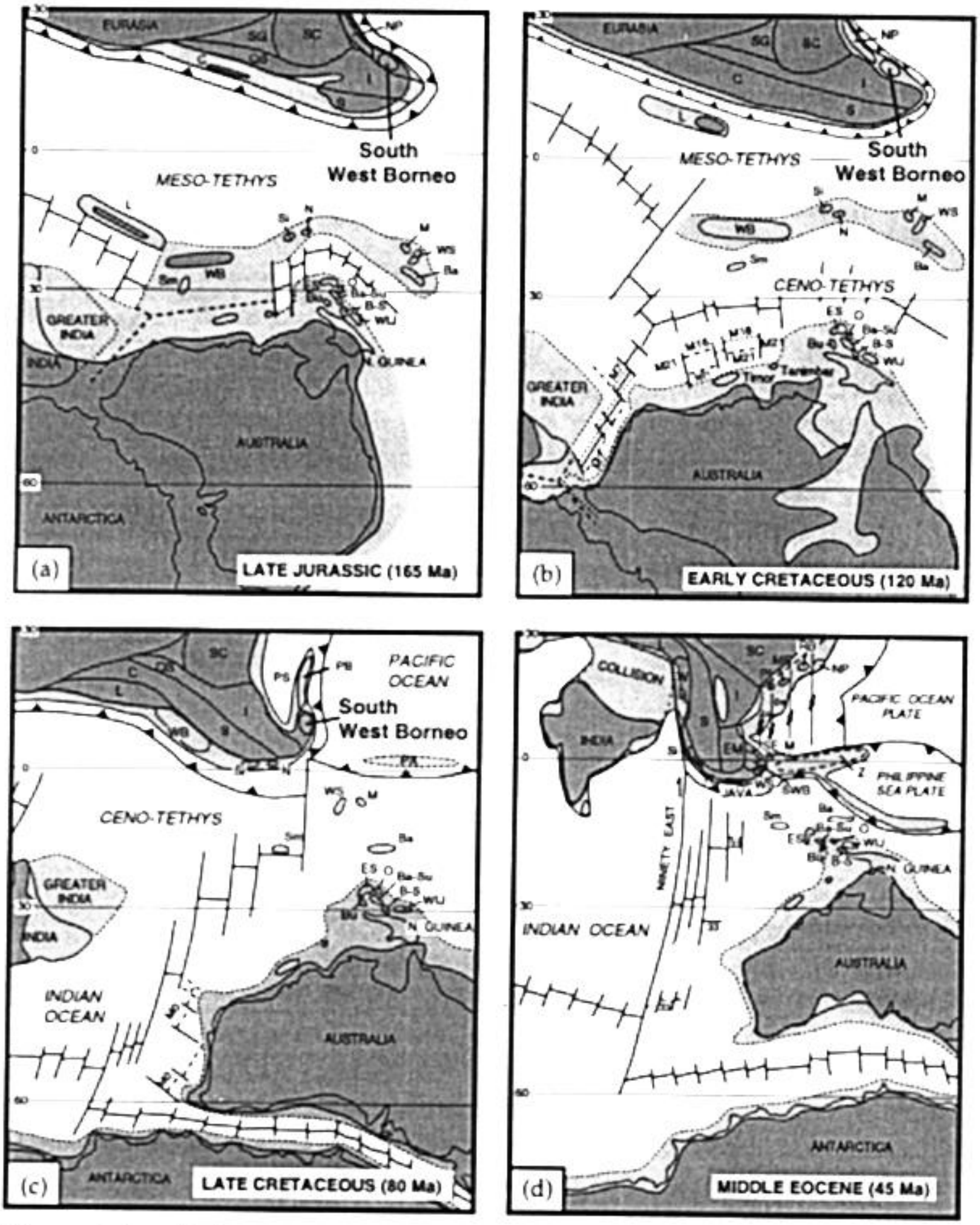
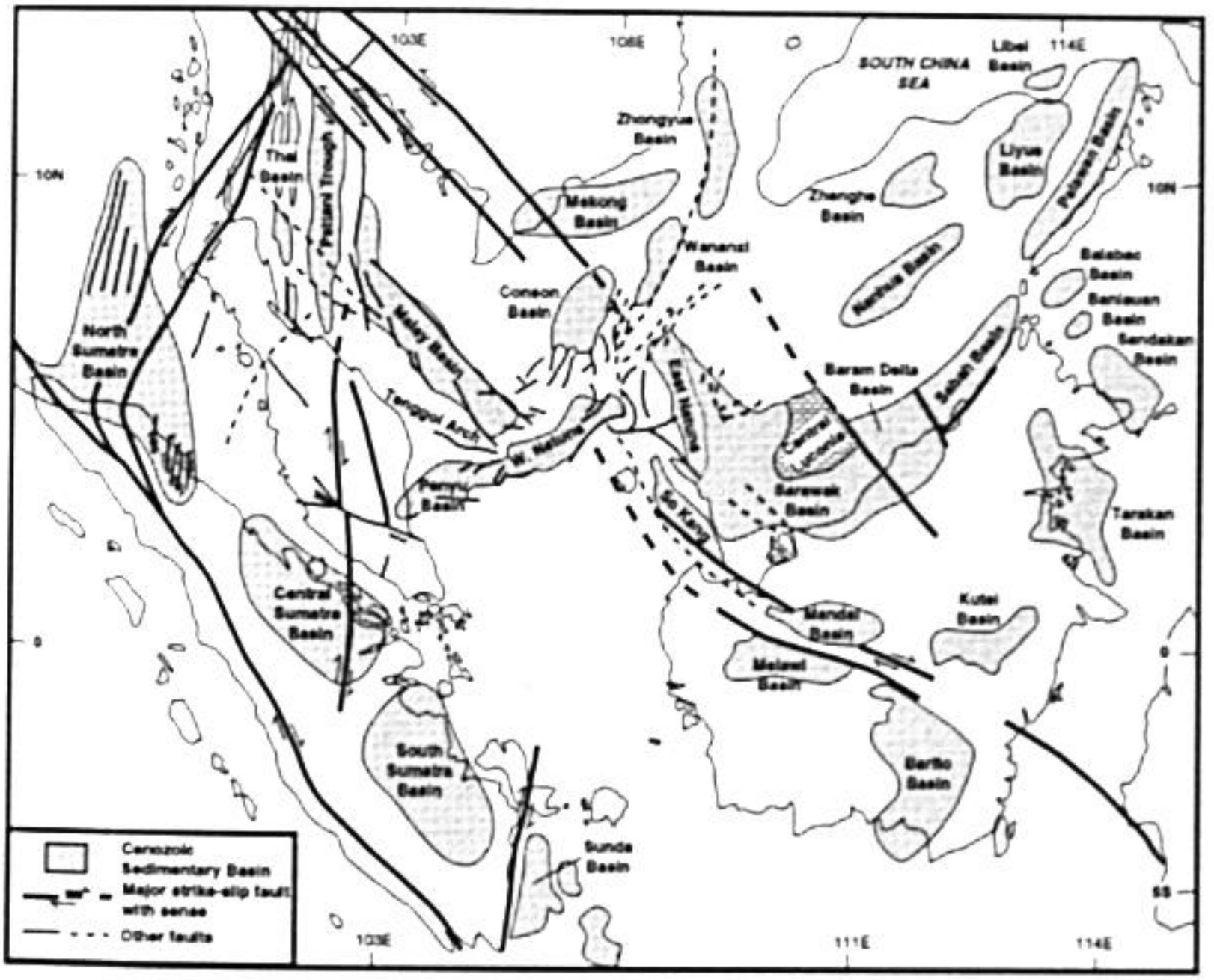


Figure 2.5 Palaeogeographic reconstructions for Eastern Tethys in (a) Late Jurassic, (b) Early Cretaceous, (c) Late Cretaceous and (d) Middle Eocene times showing distribution of land and sea.

SG = Songpan Ganzi accretionary complex; SWB = South West Borneo (includes Semitau); NP = North Palawan and other small continental fragments now forming part of the Philippines basement; Si = Sikuleh; N = Natal; M = Mangkalihat; WS = West Sulawesi; Ba = Banda Allochthon; ES = East Sulawesi; O = Obi-Bacan; Ba-Su = Bangai-Sula; Bu = Buton; B-S = Buru-Seram; WIJ = West

continued...

Irian Jaya; Sm = Sumba; PA = Insipient Philippine Arc. M numbers represent Indian Ocean magnetic anomalies. Other terrane symbols as in Figures 2.4 and 2.5 modified from Metcalfe (1990)[10] and partly after Smith *et al.* (1981),[47] Audley-Charles (1988)[7] and Audley-Charles *et al.* (1988).[8] Present day outlines are for reference only. Distribution of land and sea for Chinese blocks principally from Wang, (1985).[48] Land and sea distribution for Pangea/Gondwanaland compiled from Golongka *et al.* (1994),[44] Smith *et al.* (1994),[45] and for Australia from Struckmeyer & Totterdell (1990).[46]



Map 2.5 Oil and gas bearing Cenozoic sedimentary basins and major fault zones of Malaysia and adjacent parts of Southeast Asia. See text for discussion of basin development and oil and gas occurrences.

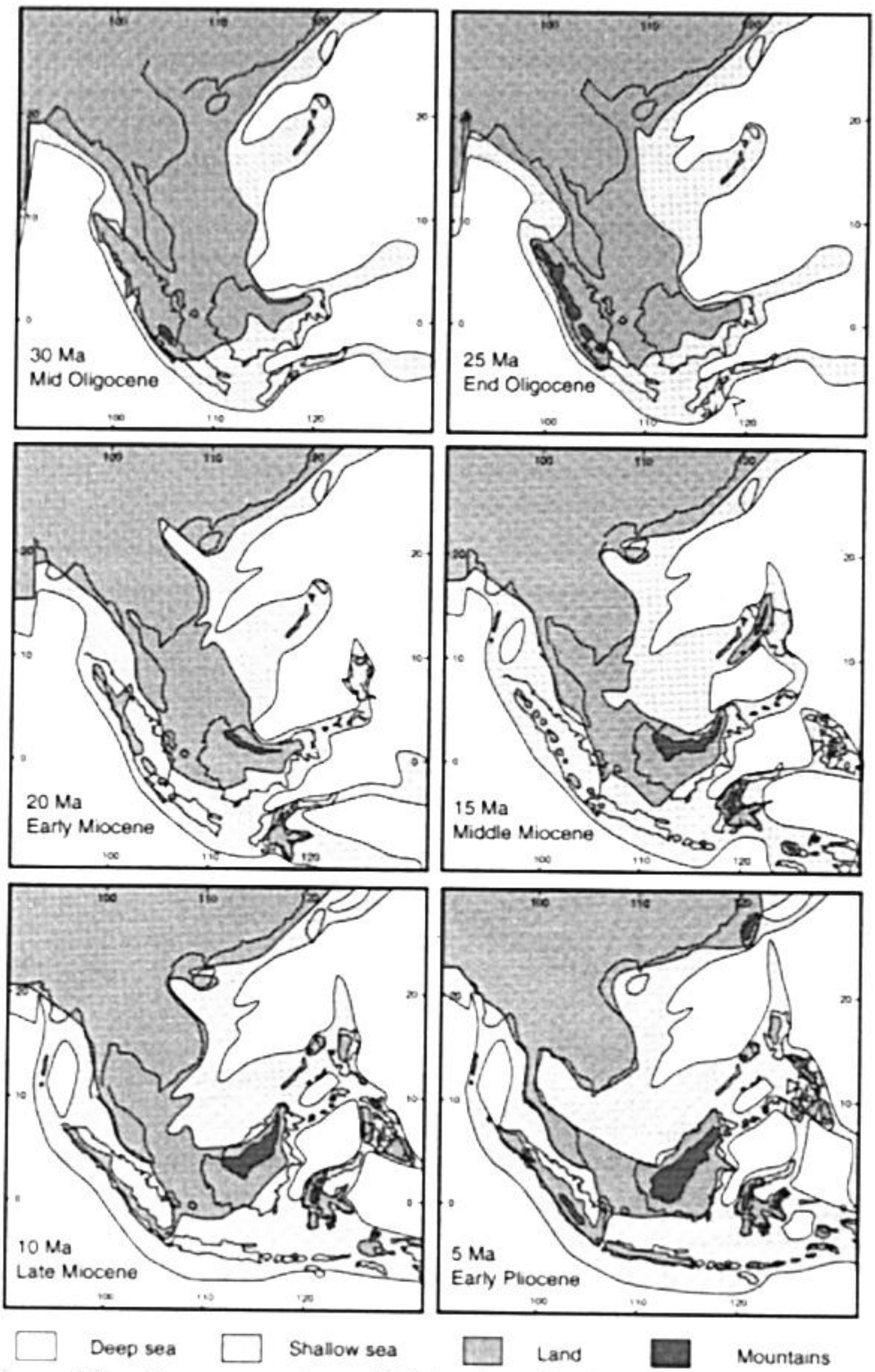


Figure 2.6 Reconstructions of Malaysia and adjacent parts of East and Southeast Asia for the last 30 million years showing the variation in distributions of deep sea, shallow sea, land and mountains. After Hall, in press.[49]

Mineral Deposits

Peninsular Malaysia

Tin

Deposits of tin ore occur extensively in Peninsular Malaysia, mainly as alluvial placer deposits in the Quaternary, but also as primary lode deposits. The tin mainly occurs as cassiterite ore in alluvial deposits and forms part of the 400 km wide Southeast Asian Tin Belt extending 2800 km from Burma and Thailand through Peninsular Malaysia to the Indonesian tin islands of Bangka and Belitung. Historically, these deposits have been extremely important to the economic development of Malaysia and Southeast Asia (see Chapter 7), and altogether, 9.6 million tonnes of tin which forms 54 per cent of the world's tin production has come from this tin belt. About 58 per cent of the Southeast Asian Tin Belt production has come from granitoids of Peninsular Malaysia.[35] The tin deposits of the region are associated with the major granite/granitoid bodies of Southeast Asia, formed during the emplacement of these intrusive igneous bodies that were produced by major plate tectonic processes as the continental blocks of the region converged and collided with each other.[35]

The Southeast Asian granites form three major North-South belts or provinces, a Western Granitoid Province of Cretaceous-Cenozoic (149–22 Ma) age, a Central Granitoid Province of mainly Late Triassic and Early Jurassic (230–184 Ma) age, and an Eastern Granitoid Province of Permian, Triassic and Early Jurassic (257–197 Ma) ages. The Eastern Province was formed by subduction processes on the western margin of the Indochina terrane during convergence with the Sibumasu terrane. When these two continental terranes collided with each other, the Central Province granites were generated. The younger Western Province granites were principally formed when the West Burma terrane collided with Sibumasu and by subsequent subduction processes. The Main Range and Eastern Belt granites of Peninsular Malaysia form parts of the Central and Eastern Granitoid Provinces respectively. The tin mineralisation occurred within the granites themselves but more especially in the country rocks that immediately surrounded them. Subsequent to mineralisation, the granites and the country rocks into which they intruded were uplifted and eroded and the tin ore deposited and concentrated in river alluvium. The relationship between the tin fields of Peninsular Malaysia and the granite bodies is clearly demonstrated by Map 2.3. The major tin fields of the peninsula occur as alluvial deposits immediately to the west of the main range granites and were deposited by westwards flowing rivers that eroded the Main range granite mountains of the peninsula.

Gold

The gold in Peninsular Malaysia occurs primarily as free gold in vein quartz generally hosted in Palaeozoic sedimentary rocks. In terms of its effect on the economy and development of Malaysia, gold mining has played only a minor role. In Peninsular Malaysia, it was carried out for at least 500 years prior to the occupation of Melaka by the Portuguese in 1511. Since then, gold mining has continued but has declined markedly since World War II. In late 1992, there were 20 alluvial mines in operation, mostly in Kelantan and Pahang. Between 1982 and 1992, annual gold production in the Peninsula ranged from 180 to 900 kg. Since 1889, 37 tonnes of gold have been produced from the Peninsula, 31 tonnes of this (83 per cent) being from the Raub Australian Gold Mine in Pahang[36] (Map 2.3).

Other Metalliferous Mineral Resources

These include iron ore (Bukit Besi and Bukit Ibam being notable mines); titanium (from ilmenite which is a by product contained in the 'amang' from tin mining); tungsten associated with tin ore, platinum group minerals (also as a by-product to tin mining), and aluminium from bauxite mined in Johor state. Minor copper/lead/zinc deposits are also known in Peninsular Malaysia but these have not so far proved economic.

Sarawak

Most of the important metalliferous mineral deposits of Sarawak occur in southwest Sarawak, west of the Lupar Valley and are associated with the older continental basement of the Semitau and South West Borneo Blocks. The main metalliferous deposits in west Sarawak are confined to the Bau district. For a detailed historical discussion of natural resources and mineral resource production in Sarawak see Amarjit Kaur.[37]

Antimony

Antimony ore occurs in a number of places in Sarawak, mainly in the Bau and lower Rajang areas. The ore, mainly stibnite, occurs in veins cutting limestone and as elluvial boulders.[38] Antimony ore was discovered in the Bau district in 1823 and since then about 90 690 tonnes have been produced (most of this in the latter part of the last century). Following a resurgence of interest in antimony mining in the early 1970s due to a peak in world antimony prices, mining of the ore ceased in the early-mid 1980s due to depletion of ore reserves.

Gold

The gold ore deposits occur chiefly as small irregular siliceous replacement bodies and veins in massive limestone and along the contact zones between clastic sediments and limestones. Mineralisation is believed to be in part related to small granodioritic intrusions of Miocene age. The gold is generally sub-microscopic and can only be detected by chemical means. Most of the total recorded gold output of 43 956 kg from Sarawak came from the Bau Mining District in West Sarawak of which 31 104 kg was produced between the introduction of the cyanide process by the Borneo Company Ltd in 1899 and the closure of their treatment plant in 1921. Since then, gold has only been mined on a local basis and output has shown a steady decline with only 504 g being produced in 1982.[38,39]

Bauxite (Aluminium ore)

Bauxite, which develops as a weathering product generally over plutonic igneous rocks, was mined in Sarawak at Munggu Belian from 1958 to 1965 and a total of 1.52 million tonnes were mined and exported (mainly to Japan) and for a few years, bauxite was Sarawak's main mineral product. Since 1965, bauxite reserves of around 1.6 million tonnes have been proven in Sarawak but low percentages of aluminium oxide and low percentages of aluminium recoverable by the bayer process, has meant that these reserves have not been extensively exploited.[38]

Mercury

Mercury mining and smelting at Tegora and Gading, was an important industry in west Sarawak during the late nineteenth century but production has been small and intermittent since 1898. The mercury occurs mainly as cinnabar and realgar associated with breccias in sandstones, and also as elluvial cinnabar. Mercury was first exported from Sarawak in 1868 and between then and 1949, official production was 22 000 flasks (760 tonnes).[40]

Other Metalliferous Mineral Resources

Small deposits of iron ore and sulphide orebodies of lead, copper, nickel and cobalt are also known in Sarawak, but these have yet to prove economic.

Sabah

Copper, Gold & Silver

Copper mineralisation, with associated gold and silver is known in at least twenty localities in the Labuk and Karamuk valleys, at Taritipan, on Banggi Island, around Gunung Kinabalu, in the upper Segama valley and on the Semporna peninsula. The most important deposit is found at Mamut on the southeastern slope of Mount Kinabalu where copper is currently mined. This low-grade porphyry copper deposit is associated with Tertiary granitoid intrusions and the Mamut Mine has mineable reserves of about 77 million tonnes of ore with an average grade of 0.608 per cent copper and recoverable amounts of gold and silver. Mining at Mamut started in 1975 and since then it has produced more than 2.1 million tonnes of concentrates containing 520 000 tonnes of copper, 39 tonnes of gold and 255 tonnes of silver.[38,39]

Antimony

A small stibnite deposit occurs southwest of Ranau but this has not been exploited economically.

Chromium

Chromite occurs in ultrabasic rocks in the Labuk valley, on the northern islands and in the Darval Bay area. These minor deposits were discovered early this century but extensive prospecting in the early 1960s, although finding more than thirty localities with chromite ore, proved no mineable reserves.

Aluminium

Bauxite has been formed as a weathering product over gabbro intrusions in the lower Labuk valley. The deposits are quite rich in aluminium, but unfortunately reserves are low. One deposit near Telupid, had proven reserves of about 2.5 million tonnes.[38]

Other mineral deposits

Minor deposits of iron, nickel, lead-zinc, manganese, mercury, tungsten and molybdenum are known in various parts of Sabah, but to date these have not proved economic.

Fossil Fuels — Coal, Oil & Gas Resources

Coal

Coal is formed from the accumulation of plant debris and its subsequent coalification due to heat and pressure in the subsurface as it is progressively buried to greater depths in the sediment pile. Various grades of coal are recognised as this process progresses and plant debris is first changed into lignite (brown and earthy looking), then sub-bituminous coal (dark brown/black and friable), bituminous coal (friable black coal) and ultimately to the highest grade coal, anthracite (black, very shiny and coherent). The world's largest deposits of coal occur in Palaeozoic (540–251 million years old) and Mesozoic (251–65 million years old) sediments. However, sediments of these ages in Malaysia have virtually no coal, apart from a few very thin seams which are uneconomic, in Lower Carboniferous rocks of eastern Peninsular Malaysia. The economically viable coal deposits of Malaysia are in fact found in Cenozoic rocks (younger than 65 million years of age).

Peninsular Malaysia

Only very small deposits of coal and lignite have been found in Peninsular Malaysia. These occur in small lacustrine Cenozoic basins. Just one commercial mine was developed in Peninsular Malaysia at Batu Arang in Selangor State, where lignite and sub-bituminous coal of Miocene age (15–20 Million years old) occur as streaks in dark shales and as seams up to 2.4 m thick. These coals were worked at Batu Arang between 1915 and 1960. Production was severely disrupted during the Japanese Occupation period and the mine was eventually closed in 1960, partly due to diminishing reserves and also due to the competition from oil and the internal combustion engine. Coal from Batu Arang was important as the main fuel for the steam locomotives on the Malayan Railways. An interesting political/social development in Malaysia, the carrying of identity cards, was in fact introduced at Batu Arang to counteract communist insurgency, and this was subsequently adopted by the government on a country-wide basis. See Amarjit Kaur[41] for details and a history of coal mining in Malaysia.

Sarawak

Coal in west Sarawak occurs in the Kayan Sandstone and Silantek Formations of mainly Eocene and Oligocene age, and in the Plateau Sandstone Formation of Miocene age, and in central and north Sarawak it occurs in Miocene age strata.[38,42] Coal fields are known at Silantek,

Bintulu, Merit-Pila, and Mukah-Balingian. The Silantek coal field contains measured reserves of 7.3 million tonnes with additional inferred reserves of 50 million tonnes. The earliest reference to Silantek coal was in 1868 and production of bituminous coal, anthracite and semi-anthracite has continued up into the 1990s. Coal near Bintulu has been known since 1913 but the coal seams, though numerous, are generally too thin to be mined commercially. The Bintulu field has estimated reserves of bituminous coal totalling 20 million tonnes. In the Merit and Pila areas, north of Kapit, extensive exploration activities in the late 1970s proved ortho-lignitic or sub-bituminous coals occurring in seams of 1 to 3 m thick. Total measured reserves were estimated in 1994 to be between 113.8 million tonnes with a further 92.6 million tonnes indicated and 180 million tonnes inferred reserves. Mining operations commenced in late 1988 and up to 1992, about 159 000 tonnes had been produced. The Mukah-Balingian coal field is located in the coastal lowlands between Batang Mukah and Batang Balingian and was actively prospected in the 1970s. Miocene and Pliocene aged lignitic coal seams of up to 15 m thick have been proven and large estimated total reserves of 270 million tonnes are indicated.

Sabah

Sub-bituminous coal has been mined in Sabah at Silimpopon and on Labuan Island and coal seams are also known at various places in the upper Kinabatangan area and near Sandakan. A colliery was operated at Silimpopon from 1905 to 1932, largely to supply ships' bunkers. Remaining reserves have been estimated at about 14 million tonnes.[38] On Labuan, coal was mined between 1852 and 1912 but only about 0.5 million tonnes were produced before dewatering problems caused mining operations to be closed down. In 1948 it was estimated that about 9 million tonnes of reserves remained. In the late 1980s, good quality bituminous coal seams of up to 5m thick were reported in the Maliau and Malibau basins and reserves of several hundred million tonnes were estimated.

Oil & Gas

Crude oil and natural gas are generated by the maturation ('cooking' by application of heat and pressure) of organic material (kerogen) in suitable sedimentary source rocks. The final product of maturation, whether oil or gas, and the quality of the crude oil produced, depends upon the type of kerogen in the source rocks and the temperatures to which the rocks have been subjected to. If the kerogen of source rocks comprises the remains of marine micro-organisms, then that kerogen will tend to produce both oil and gas. If the kerogen comprises land plant material, then relatively little

oil will be produced on maturation and mainly gas will result. When kerogen of any type is heated above a certain temperature range (50–150 degrees C) known as the 'oil window', then only gas is produced. Because they are light and mobile, oil and gas, following their generation in source rocks, migrate through the sedimentary rock pile and are subsequently trapped in pools where they form oil or gas fields. Sometimes, oil and gas are not trapped and escape to the surface as natural oil and gas seeps. The principal oil and gas fields of Southeast Asia and Malaysia are found in regressive sandstone formations of predominantly Upper Oligocene and Middle and Upper Miocene ages (25–5 million years old) or in carbonate buildups (reefs) of similar age that are found in the various Cenozoic sedimentary basins of the region (Map 2.5). The source rocks for most of the hydrocarbons found in the Southeast Asian Cenozoic sedimentary basins are interpreted to be mainly Cenozoic sedimentary rocks that contain appreciable amounts of land plant derived kerogen. The Cenozoic sedimentary basins of Malaysia and adjacent parts of Southeast Asia are areas where tectonic subsidence and extension took place during the last 65 million years and where sediment sourced from surrounding land areas filled in these depressions. The tectonic origins of the individual basins and their sediment piles varies considerably but they are generally related to the major Cenozoic tectonic processes and events that have affected the region. A detailed discussion of these processes and events is beyond the scope of this Chapter, but the origins of Malaysian hydrocarbon-bearing basins will be briefly touched on below. For further details the reader is referred to Hutchison[42] and works cited therein. The principal oil and gas fields of Malaysia are located in the Malay Basin, offshore to the northeast of Peninsular Malaysia, and in the Sarawak, Baram Delta and Sabah Basins, immediately offshore northwest of Sarawak, Brunei and Sabah (Map 2.5). The total estimated reserves of oil in Malaysia is between 3600 and 3700 million barrels and total reserves of gas are between 59 and 67.8 trillion cubic feet. Daily production for Malaysia in 1992 was 637 000 barrels of oil per day and 2142 million cubic feet of gas per day.[42]

Peninsular Malaysia

Two Cenozoic sedimentary basins are located in Malaysian waters offshore Peninsular Malaysia, the Malay and Penyu Basins (Map 2.5). These two basins have generally been regarded to have formed essentially along older Mesozoic structural trends when major strike slip faulting and crustal block rotations occurred in Southeast Asia due to the collision of the Indian continent with Eurasia and they contain a more than 10 km thick pile of sediments of partly marine, but mainly fluvio-lacustrine origin. An alternative interpretation of basin development related to an underlying mantle plume has however been put forward.[43] The oldest

dated sediments in the basins is Lower Oligocene (about 45 million years old) but continental strata in the basal part of the basins may be of Eocene age. Sedimentation initially occurred in extensional half-grabens generally oriented NNW-SSE in the north and western part of the Malay Basin but more E-W in the SE part of the Malay Basin and in the Penyu Basin. In the Middle to Upper Miocene a phase of N-S compression caused structural inversion and the development of anticlinal structures within these basins that have provided the necessary structural traps for the oil and gas. Exploration in the Penyu Basin has revealed relatively few oil and gas accumulations, and the commercial oil and gas fields are found within the Malay Basin which is a well established hydrocarbon producing area. Based on the hydrocarbons present, the Malay Basin can be divided into two provinces, a non-associated gas province which covers the north and central parts of the basin and an oil and associated gas province in the southeastern part of the basin. Oil is mainly found in Upper Oligocene and Lower Miocene reservoirs. Production of hydrocarbons from the Malay Basin began in 1971 and up to 1992, 1073 million barrels of oil had been produced from twelve hydrocarbon fields.[42]

Sarawak

Oil and gas accumulations in Sarawak and immediately offshore, occur in the Sarawak Basin and in the Baram delta (Map 2.5). The Sarawak Basin can be divided into two provinces, the Balingian Province and the Central Luconia Province. In the Balingian Province, coastal, lower coastal plain and fluvio-deltaic sequences ranging in age from Upper Oligocene (27 million years ago) to Upper Miocene (9 million years ago) were deposited. A carbonate platform of early Lower Miocene age (about 23 million years ago) is also found within the sequence. Hydrocarbon fields generally occur in Oligocene and Lower Miocene coastal plain sands, and traps are in highly faulted anticlines. Source rocks are considered to be coals and organic-rich clays, and this, combined with a high geothermal gradient, results in the Balingian Province being gas-prone. The Central Luconia Province is a large area on the Sarawak shelf characterised by a Middle Miocene (about 15 million years old) carbonate platform from which rise pinnacle reef carbonate mounds. These highly porous carbonate mounds are now draped by younger impervious mud rocks which act as hydrocarbon seals and hence traps. These pinnacle reef traps contain impressive concentrations of gas which is now being piped onshore at Bintulu and liquefied for export. A combination of plant type kerogen as a source, and high geothermal gradient has produced mainly gas in the Central Luconia Province. The Baram Delta basin comprises coastal and coastal-fluviomarine sands deposited by the Baram river in a huge northwestwards prograding delta since the Middle Miocene (last 15 million years). Marine shale intervals occur within the predominantly

sand sequence and these act as seals for the hydrocarbon traps which generally occur in anticlines associated with growth faults or as dip fault closures. The search for oil and gas was originally centred around Miri in Sarawak, where reports of oil seepages go back to 1882. The Anglo Saxon Oil Company drilled its first well, Miri No. 1, in 1910 on Miri Hill which forms part of the ancient Baram delta, and struck oil. Production from this well peaked at 15 211 barrels a day in 1929 but fell to only 275 barrels a day when it was finally shut down in 1972.[38] The first offshore exploration wells were drilled in 1957 but it was only in the early and mid 1960s that the first discoveries were made. In 1994, an estimated total of about 146 000 barrels of oil were produced each day from Sarawaks oil fields, and an average of 1314 million cubic feet per day of non-associated gas and 14 000 barrels of condensate were produced from the Central Luconia gas fields.[38] A large part of the Baram Delta is situated offshore Brunei and in 1929 the giant Seria Oil Field was discovered in the Brunei part of the delta leading to that small country's economic wealth. Source rocks are carbonaceous lower coastal plain and fluvial shales and a relatively low geothermal gradient has produced significant quantities of oil. Between 1910 and 1992, the Baram Delta oil fields had produced 3062 million barrels of oil.[42]

Sabah

Oil and gas occurrences in Sabah are found principally in the northeastern part of the Baram Delta basin (see above for discussion), and in the Sabah Basin immediately offshore NW Sabah (Map 2.5). The Sabah Basin represents the transition from a steep continental slope (with land on the southeast side) which rapidly gave way north-westwards to outer neritic and bathyal deep-marine conditions. This elongate basin is related to the Sabah orogeny and uplift, and deformation of the Crocker formation basement rocks. Commercial oilfields in the Sabah Basin were first discovered in 1971 and all except one occur in Middle to Upper Miocene clastic reservoirs deposited on the continental slope/margin and in anticlinal and more complex structural traps. The one exception is the Tembungo field, in which oil is produced from Upper Miocene deep-marine turbidite sands formed into a simple anticline. Total production from the Sabah Basin between 1971 and 1992 was 461 million barrels of oil.[42]

Table 2.1 Malaysian production of mineral commodities, 1994

Commodity	Units	P. Malaysia	Sabah	Sarawak	By-product	Total
Bauxite	tonnes	161 919				161 919
Copper-in-conc.	tonnes		25 267			25 267
Gold	grams	1 037 763	2 140 611	906 012	682	4 085 068
Iron ore	tonnes	202 682			40 500	243 182
Rare earth minerals	tonnes				426	426
Silver	grams		13 061 416	280 569		13 341 985
Ta-Nb mineral	tonnes					
Tin-in-conc	tonnes	6 458				6 458
Ilmenite	tonnes	811			115 885	116 696
Zircon	tonnes				1 656	1 656
Aggregates	'000 t	73 074	1 526	5 657		80 257
Barytes	tonnes	17 144				17 144
Clays	'000 t	5 061	26	332		5 419
Kaolin	tonnes	312 628				312 628
Limestone	'000 t	20 894	3	1 615		22 512
Sand & gravel	'000 t	14 647	41	5 690		20 378
Silica	tonnes	495 000		230 756		725 756
Coal	tonnes			173 749		173 749

Source: *Malaysian Mineral Yearbook 1993–4* (Geological Survey Department)

CONCLUSIONS & THE FUTURE

Geological resources that have proved historically important for the economic development of Malaysia include major tin deposits in Peninsular Malaysia and oil and gas accumulations in the Malay, Sarawak and Sabah Basins of the Malaysian offshore. Other locally significant resources include coal deposits in Peninsular Malaysia (now mined out), Sabah and Sarawak, and gold, antimony, copper, silver, tungsten, aluminium and mercury deposits. The Malaysian mining industry has, until recently, been largely tin dependent. However, tin production has been steadily declining (from 36 884 tonnes in 1985 to 6458 tonnes in 1994) in line with the declining price of tin (29.67 RM/kg in 1985 to 14.14 RM/kg in 1994).[50] In recent years there has been a high level of exploration for precious and base metals, other industrial minerals, and coal. The recent emphasis given to the extraction of industrial minerals and systematic exploration for ball clay, bentonitic clay, granite dimention stone, kaolin, silica sand and limestone resources continued to be a priority under the Sixth Malaysia Plan. Oil and gas continue to be Malaysia's largest revenue earner and exploration for oil and gas continues to be active, with good prospects for further discoveries as technological advances allow drilling in deeper water, and for more efficient exploitation of reservoirs (eg. with the new horizontal drilling and higher percentage recovery techniques). Table 2.1 above gives a summary of Malaysian mineral commodity production for 1994.

Malaysia has indeed been a 'lucky' country (see Chapters 7 and 9) as far as natural geological resources and wealth is concerned and this has to a large extent protected the country during recent times of recession. Continued careful management of these resources, future exploration for new ones, coupled with careful management and sustainability of forest resources and agricultural resources, will continue to allow Malaysia to develop at a rate that is not only the envy of other countries in the Southeast Asian region, but globally.

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3 Flora

N. Prakash
University of New England

Malaysia is regarded as one of the most progressive countries in the world as far as management of its natural resources is concerned. Nevertheless, it remains to be seen if the ever-present contest between ecological and economic needs can be kept in balance. There are now very few people in the world in positions of responsibility who still do not recognise the overwhelming need for nature conservation and biological sustainability. The forest is a treasure house of various useful products of which timber is but one.[1,2,3]

The virtually insatiable demand for timber and wood chips from countries such as Japan, Taiwan and Korea who then export the finished products to regions such as North America and Europe pose a real threat to Malaysian forests and indeed forests everywhere in the world. In 1992, exports of sawn timber from Peninsular Malaysia amounted to 2195 000 m^3 (worth US$535 million) whereas Sabah exported 5 386 000 m^3 (worth US$960 million). Of these, timber from *Shorea* spp (meranti) alone accounted for US$782 million. Japan took nearly half of all exports.[4] Besides logging, forests are also being felled for wood chips. A great drawback with exploitation for wood chipping is that the entire above-ground biomass is harvested, resulting in the loss of seed source for forest replacement, and the elimination of potential drug and fruit trees. Wood chipping of mangrove forests could leave bare mud deserts and decimate local fishing industries. Table 3.1 lists the total area, population, area of rainforest and the extent of deforestation in Malaysia as a whole and in Peninsular Malaysia.

VEGETATION

The vegetation of Malaysia is part of an Indo-Malaysian flora stretching from the eastern edge of Africa to New Guinea and even tropical Australia. There are regional variations based on local climate. The northern part of Peninsular Malaysia, north of the Kedah River, is monsoonal with a regular dry season. Here the flora is different from the rest of the country and resembles that of Thailand and Burma. Several species that are found in this region are not found further south. The forests here are also more open, contain many deciduous species, and have a good representation of shrubs and herbs on the forest floor.

Table 3.1 Malaysia: Population and deforestation

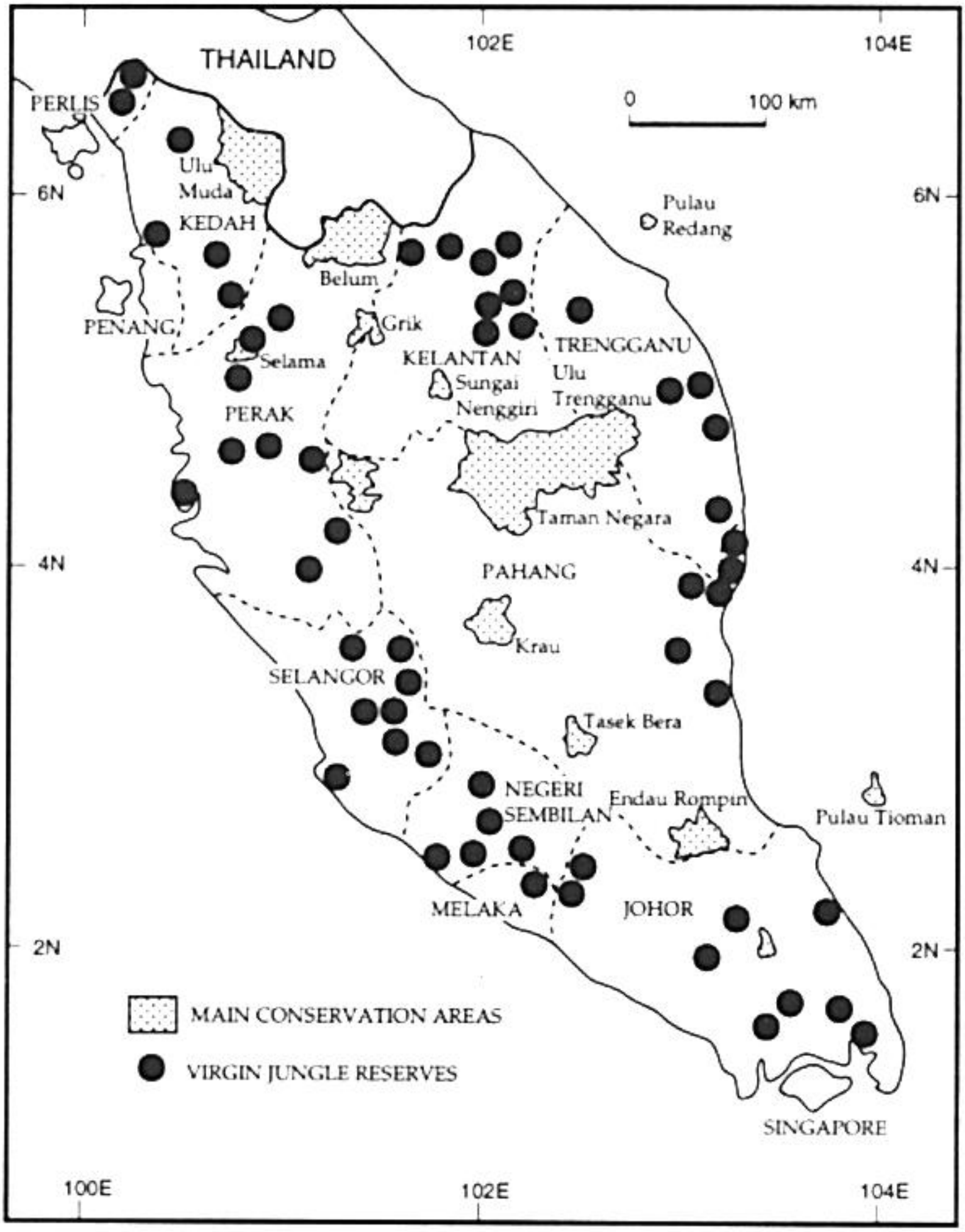
	Malaysia	Peninsular Malaysia	Proportion
Land Area	329 807 km^2	131 598 km^2	(40%)
Population (1989)	17.4 m	14.3 m	(82%)
Rainforest	200 450 km^2	69 780 km^2	(35%)
Annual deforestation	2 210 km^2	956 km^2	(43%)

Source: N.M. Collins, J.A. Sayer and T.C. Whitmore, *The Conservation Atlas of Tropical Forests: Asia and the Pacific* (London: Macmillan, 1991).

Most of the country however, has an equatorial climate with a mean monthly temperature range of 25.5 to 27.3°C, and a mean monthly rainfall of 160–300mm. The time difference between the longest and the shortest day could be as little as 9 minutes.[5] Although there are no seasons as such, the intermonsoonal periods of April/May and October/November are relatively dry. May and June tend to be relatively hot whereas November and December are generally cooler.

As a response to these rather uniform conditions, many plants embark on their reproductive activity at irregular intervals of 2 to 11 years. It is still not clear what triggers flowering of Malaysian plants. Dry weather, increased sunshine, and a drop in minimum temperature have been implicated. Perhaps different species respond to different stimuli. The flowering behaviour and pollination ecology of forest trees has been little studied.[6-9] The seeds of most species are recalcitrant, germinate soon after dispersal, and have a short life span.

Nearly 50 per cent of the world's 250 000 flowering plant species occur in tropical rainforests, which occupy only 7 per cent of the land area. Malaysian rainforests are among the most diverse and complex of the world's rainforests. Approximately 60 per cent of the land area (less than 40 per cent in Peninsular Malaysia) is still believed to be covered by forest, but this is no doubt rapidly decreasing. Table 3.2 gives a breakdown of various kinds of forests (both natural and planted) whereas Table 3.3[10] and Map 3.1[10] show the main conservation areas in Peninsular Malaysia and the network of 81 virgin jungle reserves that cover 910 km^2. The current population is about 20 million and a figure of 70 million has been mentioned by the Prime Minister at the time of writing, Mahathir Mohamed, as being an ideal size for the country. This no doubt puts enormous pressure on the country's plant wealth – both natural and cultivated. It has been claimed that while the Federal Government appeared to be fully cognisant of the need for conservation in the utilisation and management of the country's natural resources, its implementation of the programme was not as apparent.[11]



Map 3.1 Peninsular Malaysia: Main conservation areas and virgin jungle reserves.

Sources: N. M. Collins, J. A. Sayer and T. C. Whitmore (eds), *The Conservation Atlas of Tropical Forests: Asia and the Pacific* (London, Macmillan, 1991); Department of Forestry, Malaysia.

Table 3.2 Malaysia: Forests and tree plantations

Total Forest Cover	19.4m ha
Permanent Forest Reserve (11.2m ha of this is Production Forest)	14.1m ha
Protected Forest	2.9m ha
Tree Plantations	4.2m ha
Stateland Forests	3.5m ha

Source: Helena Hon, *Ecology vs Economy* (Kuala Lumpur: Government of Malaysia, 1993) pp. 1–12.

Table 3.3 Peninsular Malaysia: Conservation areas (in sq km)

	Existing	Proposed
National Park		
Taman Negara	4 344	
Parks		
Endau-Rompin	c. 500	c. 430
Pulau Redang		250
Wildlife Reserves		
Belum		2 072
Endau-Kota Tinggi (East)		74
Grik		518
Krau	531	
Mersing		74
Pulau Tioman	82	
Selaama		222
Sungai Nenggiri		370
Tasek Bera		265
Ulu Muda		1 153
Ulu Terengganu		1 165
Other areas (each less than 50km^2)	2 135	567
Totals	8 293	7 086

Source: N. M. Collins, J. M. Sayer and T.C. Whitmore (eds), *The Conservation Atlas of Tropical Forests: Asia and the Pacific* (London: Macmillan, 1991).

Accurate figures for the total number of Malaysian plant species are hard to come by, but an educated estimate of the flowering plant species of the Indo-Malaysian region puts it at 25 000 (one-tenth of the total for the world) of which 9000 species occur in Peninsular Malaysia and Singapore[12] with nearly 3000 of these species being trees. Of the latter, about 800 are valuable timber species, 400 are rattan palms and 200 are fruit trees. Several hundred species are used as medicinal plants and sources of diverse natural products. There are approximately 800 species of orchids and 200 species of palms. The importance of Malaysian forests as a genetic reservoir of potentially useful plant species has been repeatedly emphasised.[13-16]

A notable feature of Malaysian flora is its extreme species richness but the presence of only a few individuals of each species in a given area. Because of the sparsity of individual trees of any given species, it is quite likely that apomixis plays a bigger role in reproduction than has hitherto been suspected.[17] A 50 hectare experimental plot in Pasoh has 830 tree species – nearly 30 per cent of all tree flora of the country. It is now widely recognised that, in spite of the fact that they support some of the tallest trees, the rainforest soils are generally very low in plant nutrients and that these nutrients are mainly locked up in the above-ground plant biomass.[18] The mycorrhizae in the forest soil appear to play a vital role in plant nutrition. Once the plant cover is removed, the soil either quickly washes off or can support introduced plants only after heavy fertilisation.

It is clear from Table 3.4, which lists the areas of different forest types in Peninsular Malaysia, that the most extensive is the lowland forest. In the rainforest, the plants depend on each other for survival. At ground level, the air is still, warm and saturated with moisture; the conditions varying little through the year. There is very little sunlight to support any ground vegetation. The leaf litter is dense and the decaying vegetation supports a rich array of fungi. Bamboos, palms and pandans may also be found as are woody climbers, ferns, gingers and various epiphytes.

Table 3.4 Peninsular Malaysia: Forest types (area in sq km)

	Area	Proportion of total land area
Lowland rainforest	57 610	43.8%
Montane forest	6 880	5.2%
Fresh-water swamp forest	4 060	3.1%
Mangrove forest	1 200	0.9%
Totals	69 750	53.0%

Source: N.M. Collins, J.A. Sayer and T.C. Whitmore (eds), *The Conservation Atlas of Tropical Forests: Asia and the Pacific* (London: Macmillan, 1991).

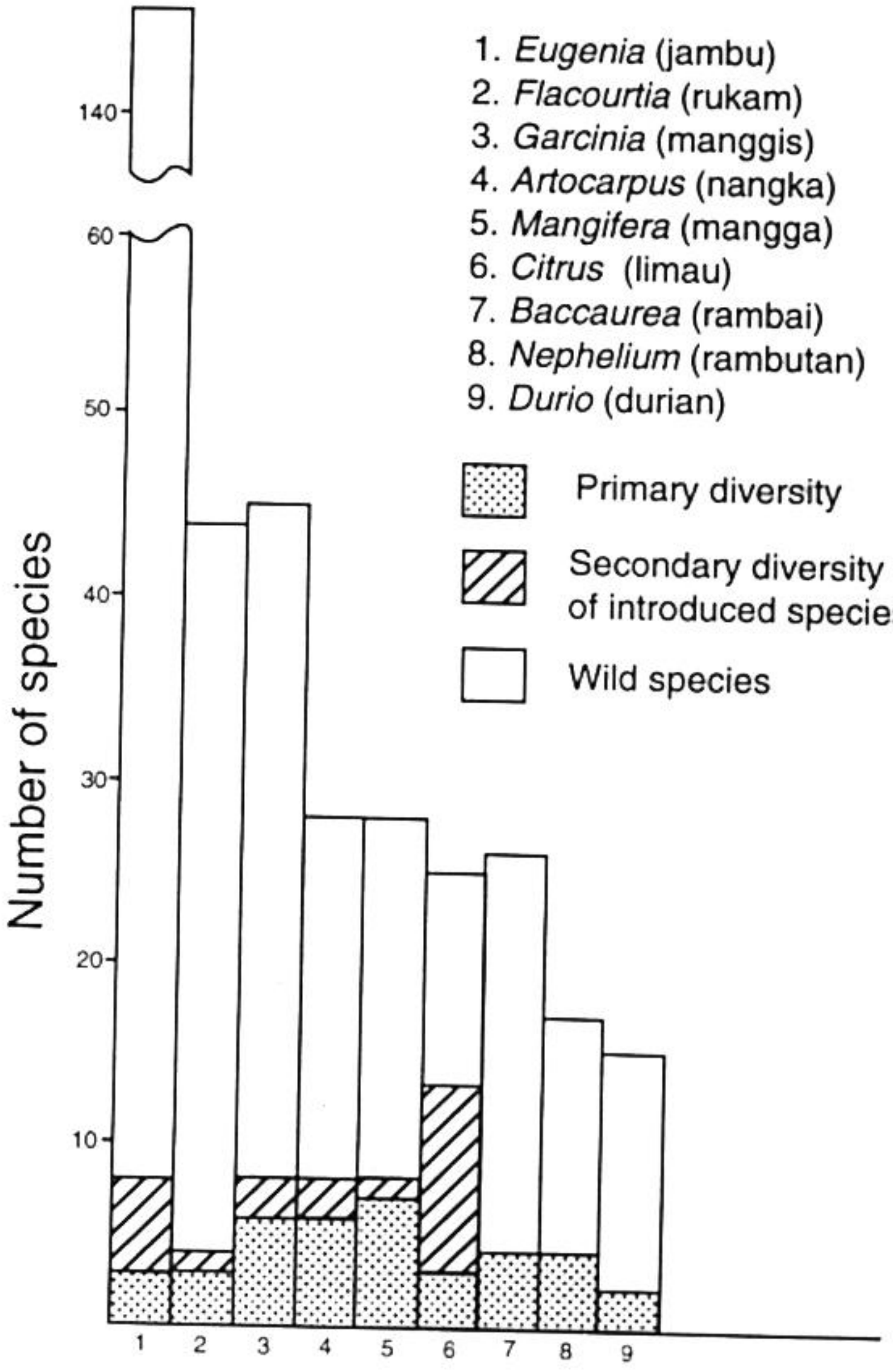


Figure 3.1 Gene pool of some fruit trees in Malaysian rainforests.

Source: J.T. Williams, 'Conservation of genetic resources in the tropics', in B. C. Stone (ed.), *Proceedings of the Symposium, Role and Goals of Tropical Botanic Gardens* (Kuala Lumpur: University of Malaya Press, 1977) pp. 187–200.

The highly sought-after timber trees, the dipterocarps, with their tall unbranched trunks, are particularly well-represented in the Malaysian flora[19] and form the main component of the emergent canopy stratum in lowland (up to 800m) rainforests. The dominant dipterocarp genera are: *Shorea*, *Dipterocarpus*, *Dryobalanops*, *Parashorea* and *Anisoptera*. The growth rates vary considerably among the species. Trees of *Shorea* are estimated to take about 70 years to attain a girth somewhat in excess of 2m whereas *Hopea* may take twice as long to attain a similar dimension. Many rainforest trees, including the dipterocarps, *Balanocarpus*, *Dryobalanops* and *Shorea*, produce prominent buttresses. Flowering is uncommon in these trees. The time plants take to first flower varies widely. In some dipterocarp species it may be 60 years before the first flowers are borne.[20] In a 35 year logging cycle, such trees are cut down long before their reproductive maturity. A few species, however, flower every year.

Some of the more prominent plant groups in the rainforest, other than dipterocarps, include legumes; the mature specimens of one of these, tualang (*Koompassia excelsa*), are known to reach heights in excess of 85m while the average height of big trees in the rainforest is about 55m.[21] In Peninsular Malaysia alone more than 100 species of figs (*Ficus*) are found. The figs bear succulent and nutritious fruits on the main trunk and these mature throughout the year, thus supporting a huge and diverse fauna. It has been claimed that a quarter of all the fruits that an orang utan eats are figs.[20] *Eugenia* (jambu), with its 700 or so Malesian species, also have succulent edible fruits and are widely distributed in Malaysian forests. There are also many wild relatives of *Durio* (durian) and *Nephelium* (rambutan etc.) in the forest. Details of the gene pool in some Malaysian fruit tree species in the rainforests[22] are shown in Figure 3.1.

The rattans[23,24] are another group of highly useful plants that are a feature of the undisturbed forest. There are more than a hundred species of these palms in Malaysia of which about 20 species are commercially important, with stems ranging up to 10cm in diameter and up to 200m in length. Most are clothed by ferocious spines. Another interesting group of monocotyledons, the bamboos,[25,26] are represented by 10 genera and 35 species in Malaysia. Of the 70 world species of insectivorous pitcher plants (*Nepenthes*), the majority are found on the island of Borneo. Two-thirds of these are highland species, found at elevations greater than 1000m, whereas the remaining occupy lowland habitats.[27]

Malaysian montane forests differ from lowland forests in their species composition. Here the dipterocarps are largely replaced by oaks, laurels and many other kinds of plants which rarely reach more than 20m in height. The epiphytes are larger and more common. Ground vegetation, on highly leached soils, is lush with acidophilous *Sphagnum* and other mosses, and ferns. Above 2000m elevation, where it is often dry and

windy, a dwarf forest exists. Characteristic plants of this zone are rhododendrons, begonias, gesnerias, and pitcher plants – a high proportion of which are endemic. Smith[28] made a study of vegetation of the summit zone of Mount Kinabalu above 3200m and listed 98 species of vascular plants including several ferns, gymnosperms such as *Phyllocladus* and *Podocarpus*, dicotyledons, *Drimys*, *Leptospermum*, *Myrica*, *Symplocus* and *Vaccinium*, and monocotyledons including a variety of grasses, sedges and orchids. Above 5000 m, no flowering plants grow but only lichens and mosses.

The secondary forest, called belukar, makes its appearance where the original forest is cleared. Plants such as the broad-leaved *Dillenia* (simpoh), *Macaranga* (mahang) and *Musa* (wild banana) in this type of forest are light-demanding and relatively short-leaved. Pteridophytes, such as *Gleichenia* and *Lycopodium* along with the grass *Imperata* (lalang) are common. Given sufficient time and if in close proximity of seed source in the primary forest, the belukar reverts back to rainforest.

Limestone hills, common on the Malaysian landscape, support a flora that is quite distinct from any other.[29-32] While some species are calcifuges, others can thrive under relatively drier conditions of the substratum.

Prominent species along the sea shore are those of *Barringtonia*, *Calophyllum*, *Casuarina*, *Hibiscus* and *Terminalia*. In the mangrove forests may be found *Avicennia*, *Bruguiera*, *Excoecaria*, *Nypa*, *Rhizophora* and *Sonneretia*, species of which are a valuable source of charcoal, firewood, tannins and poles for various uses.

Malaysia was a prominent critic of the proposed forest convention at the recent Rio Earth Summit arguing that the policy would deny developing countries the use of their own forests. The government believes that it has a sustainable forest management policy in place, balancing environmental and economic needs. Of the total forest cover of 19.4 million hectares, 2.9 million hectares are designated as Protected Forest. National parks; wildlife sanctuaries and nature reserves make up 330 000 hectares of this and 1.8m hectares other forest. Permanent Production Forest, which will be periodically logged, makes up 11.2 million hectares. In addition, 3.5 million hectares are identified as Stateland Forests, earmarked for housing, agriculture and industry to meet the needs of future population growth. Tree plantations, mainly of conifers and eucalypts, which are not only easy to establish and manage but yield more, are established on 4.2 million hectares of cleared forest land. Also, between 1986 and 1990, 25 million trees were planted, mostly by the Forest Department and including 2 million by school children.

In Malaysia, the forests are the responsibility of individual states. The National Forestry Council, established in 1971, formulated a national forestry policy – which *inter alia* provides for the establishment of permanent forest estates, promotes the practice of sound forest

management and employment of modern scientific principles, upgrading of forestry research, education and training, and the promotion of commerce in forest products and public awareness about forestry.

Logging, at the best of times, is a wasteful operation. Burgess,[33] studying hill dipterocarp forests in Malaysia, estimated that considering the basal area, for every 10 per cent felled for timber, 55 per cent was destroyed during extraction and only 35 per cent remained undamaged.

HISTORY

Plants are very important to the cultural and economic life of the indigenous people who traditionally have had an extensive knowledge of forests and plants. They made use of a staggering variety of plants – not only for food and shelter but also aesthetic uses such as wood carving.

Malaysia was linked by trade to China, India and the Middle East for nearly 1500 years before the arrival of Europeans but it is not clear if any significant plant introductions occurred during that period. Although the Portuguese took over the Port of Melaka in 1511 and were subsequently displaced by the Dutch in 1641, the real impact on Malaysian flora did not begin until the English East India Company established a base at Penang in 1786. The Europeans initially sought Southeast Asian spices such as cloves, nutmeg and pepper but eventually established plantations of these and other crops in Penang and Singapore.

The Singapore Botanic Gardens and the University of Malaya in Singapore played a vital role in the introduction of rubber and other plantation crops, and in the development of commercially valuable orchid varieties. The previous estate crops of spices, tapioca, sugar cane, and coffee were replaced in many places by rubber, introduced in 1895. An important early crop was the now largely forgotten gambier (*Uncaria gambir*) which thrived best on soil newly cleared of forest. Gambier was exported for tannin to China and Britain.[5] The most important cash crops today are rubber, oil palm and coconut. These, together with timber, account for a large percentage of export trade and the country's foreign exchange earnings based on botanical products.

While some widely cultivated Malaysian plants like rice, coconut, sago palm, sugar cane, taro, breadfruit and banana are perhaps native to the region, many like the oil palm, cocoa, corn, tapioca, guava, custard apple, pineapple, papaya, bilimbi and chilli are introduced into the country.[34,35] (see Table 3.5) The Malay villages show an astonishing variety of fruit trees and other useful plants[12] – many indigenous but others introduced. (Table 3.6)

Table 3.5 Origin of some Malaysian cultivated plants

From Central and South America		From India	
Anacardium occidentale	cashew	*Artocarpus heterophyllus*	nangka
Ananas comosus	pineapple	*Averrhoa bilimbi*	belimbing asam
Annona muricata	soursop	*Eugenia aquea*	jambu ayer
Annona reticulata	custard apple	*Eugenia cuminii*	jambolan
Annona squamosa	sugar apple	*Eugenia jambos*	jambu mawar
Arachis hypogaea	groundnut	*Feronia limonia*	gelinggai, (wood apple)
Bertholletia excelsa	brazilnut	*Mangifera indica*	mango
Capsicum annuum	chilli	*Piper nigrum*	black pepper
Carica papaya	papaya	*Zizyphus mauritiana*	bedara
Hevea brasiliensis	rubber	From China	
Ipomoea batatus	sweet potato	*Glycine max*	soybean
Manihot esculentum	cassava	*Hibiscus rosa-sinensis*	bunga raya
Manilkara zapota	chiku	*Litchi chinensis*	litchi
Passiflora edulis	passionfruit	From Africa	
Persea americana	avocado	*Citrullus lanatus*	watermelon
Phaseolus vulgaris	common bean	*Coffea arabica*	coffee
Plumeria acuminata	common frangipani	*Elaeis guineensis*	oil palm
Psidium guajava	jambu batu, guava	*Tamarindus indicus*	tamarind, asam jawa
Solanum melongena	brinjal, egg plant		
Zea mays	corn, maize		
Indigenous Malaysian Species			
Artocarpus integer	chempedak	*Garcinia mangostana*	manggis, mangosteen
Baccaurea mottleyana	rambai	*Lansium domesticum*	duku, langsat
Durio ziebethinus	durian	*Nephelium lappaceum*	rambutan
Emblica officinalis	asam melaka	*Nephelium malaiense*	mata kuching
Eugenia javanica	jambu ayer rhio	*Nephelium mutabile*	pulasan
Eugenia malaccensis	jambu merah	*Sandoricum koetjape*	sentul

Sources: B.M. Allen, *Malayan Fruits* (Singapore: Donald Moore Press, 1967); B.B. Simpson and M. Conara-Ogorzaly, *Economic Botany: Plants in Our World* (New York: McGraw-Hill, 1986).

Table 3.6 Fruit trees of Kampong Melor

Cultivated, also found wild in rainforest	
Artocarpus integer	chempedak
Baccaurea griffithii	tampoi
Baccaurea mottleyana	rambai
Bouea macrophylla	kundang
Durio malaccensis	durian melaka
Garcinia atroviridis	asam gelugor
Nephelium lappaceum	rambutan
Nephelium mutabile	pulasan
Pangium edule	kepayang kayu
Parkia speciosa	petai
Pithecellobium jiringa	jiring
Sandoricum koetjape	sentul
Cultivated, wild ancestors in rainforest	
Eugenia (3 species)	jambu bertek, jambu melaka, jambu padang
Lansium domesticum	duku, langsat
Mangifera foetida	*machang*
Sandoricum koetjape	sertapi
Cultivated, wild ancestors unknown	
Areca catechu	pinang siri
Artocarpus heterophyllus	nangka
Cocos nucifera	kelapa
Durio ziebethinus	durian
Garcinia mangostana	manggis
Cultivated, introduced from South America	
Annona muricata	durian belanda
Averrhoa bilimbi	belimbing
Carica papaya	betek

Source: T.C. Whitmore, *Tropical Rainforests of the Far East* (Oxford: Clarendon, 1984).

More emphasis needs to be placed on research into total plant biodiversity – not only of flowering plants, but also other groups such as algae, fungi, mosses, liverworts and ferns which have received comparatively little attention. The study into all aspects of native plant reproduction in trying to understand flowering and fruiting, pollination biology, breeding systems, embryology, cytology, and seed germination

is still in its infancy in the country and needs encouragement. The data obtained would be invaluable in improvement of native plants of commercial potential. More research needs to be done on reforestation using highly desirable indigenous species such as angsana (*Pterocarpus indicus*). The study of plant ecology is another area that has declined over time.

There is an urgent need for germ plasm collections of rainforest plants of national, international and regional significance. This includes not only fruit trees and other food plants but also plants such as orchids, palms, and medicinal plants. The Universty of Malaya has a collection of *Citrus* and its relatives, and the Malaysian Agricultural Research and Development Institute (MARDI) has collections of bananas and other plants but these constitute only a fraction of what needs to be conserved. There is little doubt that many species will become extinct in their wild state in the next few decades in spite of all the best intentions of the scientists and the governments. Even for those that manage to survive, the genetic diversity is bound to be greatly reduced.[36]

In a book review of *A Passion For Plants: From the Rainforests of Brazil to Kew Gardens – The Life and Vision of Ghilean Prance*, Peter Raven,[37] Director of Missouri Botanical Garden in the U.S.A., wrote: 'If we don't know what we are losing, we will scarcely work to save it; and if we neglect to save it, we will severely limit the options available to our children for the development of stable, productive systems of forestry and agriculture, and the preservation of soil and other natural resources. We may also want to preserve plants simply because they are so beautiful and fine that we should care deeply about them.' Perhaps this is as relevant to Malaysia as it is to any other part of the world.

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4 Fauna: Past, Present and Future

Lesley J. Rogers
University of New England

Malaysia forms part of the equatorial belt of tropical rainforest. The world's tropical rainforests occur in three great areas, the largest being in and around the Amazon basin, the next in Southeast Asia extending throughout the islands of the Malay Archipelago and the third being the forests of Central West Africa. There are also smaller areas of rainforest in Sri Lanka, the north east coast of Australia and Hawaii. These rainforests, particularly those in the three great areas, are of paramount importance to the world's climate. They are ecological zones with the richest variety of plant and animal species of all environments on this planet. Although they occupy only about ten per cent of the land area of the world, they contain around seventy per cent of the world's species of both flora and fauna.

The rainforests of Southeast Asia are at the pinnacle of ecological diversity. They support a richer variety of species than do the other of rainforest regions of the world. In fact, the rainforests of Southeast Asia have the most diverse collection of plant and animal species known to occur anywhere. Malaysia itself has almost two hundred known species of mammals and some eight hundred species of birds, the majority of which are found only in the rainforest.

FAUNA OF THE FORESTS

Rainforests can be divided into three stratified zones: the upper canopy, the region between the ground and the canopy, and ground level. These levels support different species of plants and animals living one on top of the other, as if in a high rise building. Some species traverse all layers of the forest but most remain largely within the one layer for which they are well adapted.

In the upper canopy of the rainforest there are birds and mammals that feed on leaves and fruits. These species tend to stay up in the canopy without descending very often into lower levels of the forest. Many of the mammals at this highest level travel from tree to tree by gliding on sails made of skin flaps stretched between their fore- and hind- limbs. This is

the mode of travel of the giant gliding squirrel and the flying lemur or colugo, which is capable of gliding for 100 metres. In the Malaysian rainforests there are also flying frogs and gliding snakes living in the upper canopy. For example, the snake *Chrysopelea pelias* flattens its body and uses sinuous movements to propel itself as it plummets through the canopy. The high canopy is also the habitat of the loris, gibbon, red leaf-eating langur and the orang-utan. Numerous species of birds share this environment, the most notable of which are the hornbills. In fact, the loud, hooting calls of the hornbills are a memorable characteristic of the Indo-Malaysian rainforest. More than half of the species of hornbills live there. The helmeted hornbill *(Buceros vigil)* and the rhinoceros hornbill (*Buceros rhinoceros*) are the most well known of the hornbills, but there are many other species. The helmeted hornbill, which occurs in the Malay Peninsula, Borneo and Sumatra, is legally protected in Malaysia and Indonesia. Although hunting is still a factor threatening the survival of the helmeted hornbill, loss of habitat is by far the greatest threat to its survival.

Between the ground and the lower canopy, there are sun-bears, yellow-throated martens, long-tailed macaque monkeys, pygmy squirrels, binturongs, shrews, masked palm civets, tarsiers (in Borneo only), marbled cats and pangolins. There are also many species of insectivorous birds and bats.

At ground level amongst the dense vegetation of the rainforests there are the larger species such as the Asian elephants, sambar deer, banteng and gaur cattle and the Sumatran rhinoceros, which survives only in low numbers in pockets of lowland forest on the Malay Peninsula and in Borneo. The ground-level species are adapted to graze or browse on the lush herbs in the swamps and in pockets of grassland in the rainforest. There are also Malay weasels, large tree shrews, bearded pigs, lesser mouse deers, clouded leopards and the Malay civet, to name but some of the better known species. Troops of pig-tailed macaques spend most of their time on or near the ground. Many varieties of insects, frogs, snakes and lizards are also present.

Several different species of squirrels live at all levels of the rainforest. Other well-known species of Southeast Asia are found in swamp forests. The most notable of these is the distinctive proboscis monkey (*Nasalis larvatus*) which is found in the riverine swamps and mangrove forests of Borneo. The long noses of these monkeys serve as resonance chambers for their 'honking' calls heard in the evening as they jostle for roosts on the boughs of mangroves overhanging the river streams. This species crosses small rivers by jumping from the trees on one bank of the river to those on the other bank. If the river is too wide for this mode of crossing they leap out, plunge into the water from a considerable height and swim the rest of the way across to the other side of the river. Proboscis monkeys are specialised to eat leaves and buds of the mangroves, a diet that is toxic

to other primates, and they also consume insects and fruit. Their distribution is limited to Borneo and their closest relative is *Nasalis concolor* found only on the Mentawai Islands in Indonesia, a string of islands to the west of Sumatra.[1]

The orang-utan is the species most strongly associated with the Southeast Asian rainforest and, for this reason, it will be discussed here in some detail. It is the symbol of Malaysia and, tragically, it is also on the list of endangered species. One hardly needs to stress the important fact that one of the species most closely related to humans is on the verge of extinction. Two countries of the world are privileged to be home to the orang-utan and they are Malaysia and Indonesia. In fact, the present-day distribution of orang-utans is confined to the islands of Borneo and Sumatra, although orang-utans were once distributed widely throughout mainland Southeastern Asia. To understand the ancient and modern distributions of the orang-utan it is useful to know something of their evolution.

EVOLUTION OF THE ORANG-UTANS

The line of evolution that includes the apes is called the hominoid line (Figure 4.1). Malaysia is home to two hominoids, the gibbon and the orang-utan. The other hominoids, chimpanzees and gorillas, exist in Africa.

Fossil records suggest that the first hominoid appeared between 17 and 23 million years ago, during the early Miocene, in the warm rainforest of East Africa. This ancestor of modern apes was called *Proconsul*. From its anatomy, it appears that *Proconsul* moved about by hanging from branches and by using the palms of its hands to give support when walking on the ground, a method used by orang-utans today. The hominoid line gave rise to the branch of evolution that led to the gibbons around 17 million years ago, well before the ancestor of the orang-utan had appeared.

The fossils of apes that have been dated back to the early Miocene period have all been found in Africa, but later ones are found in Europe and in parts of mainland Asia. By the middle Miocene (14 to 15 million years ago) it appears that the early apes had migrated from Africa into Europe and on to Asia, although to do so would have required crossing stretches of water, possibly via the Gibraltar-to-Spain route (to use present day terminology for these regions) or via the middle East. As Figure 4.2 shows, neither of these routes to the European continent would have been particularly easy to take. In fact, the continent of Africa appears to have been somewhat further from Europe and the Middle East than it is today, although there were periods during which sea levels were lower and land bridges may have been present. Perhaps the hominoids crossed from Africa to Europe when land bridges were present or perhaps

they drifted on floating islands, but no one knows. They also needed rainforest to survive and a mere land bridge without rainforest may not have sufficed. Some evidence suggests that apes were indeed present in Europe before they were in Asia: there are fossil records of ancestral apes from several sites in Europe dating back to 10 to 16 million years ago, whereas ape fossils found in North India and Southeast China have been dated to only 5 to 10 million years ago.

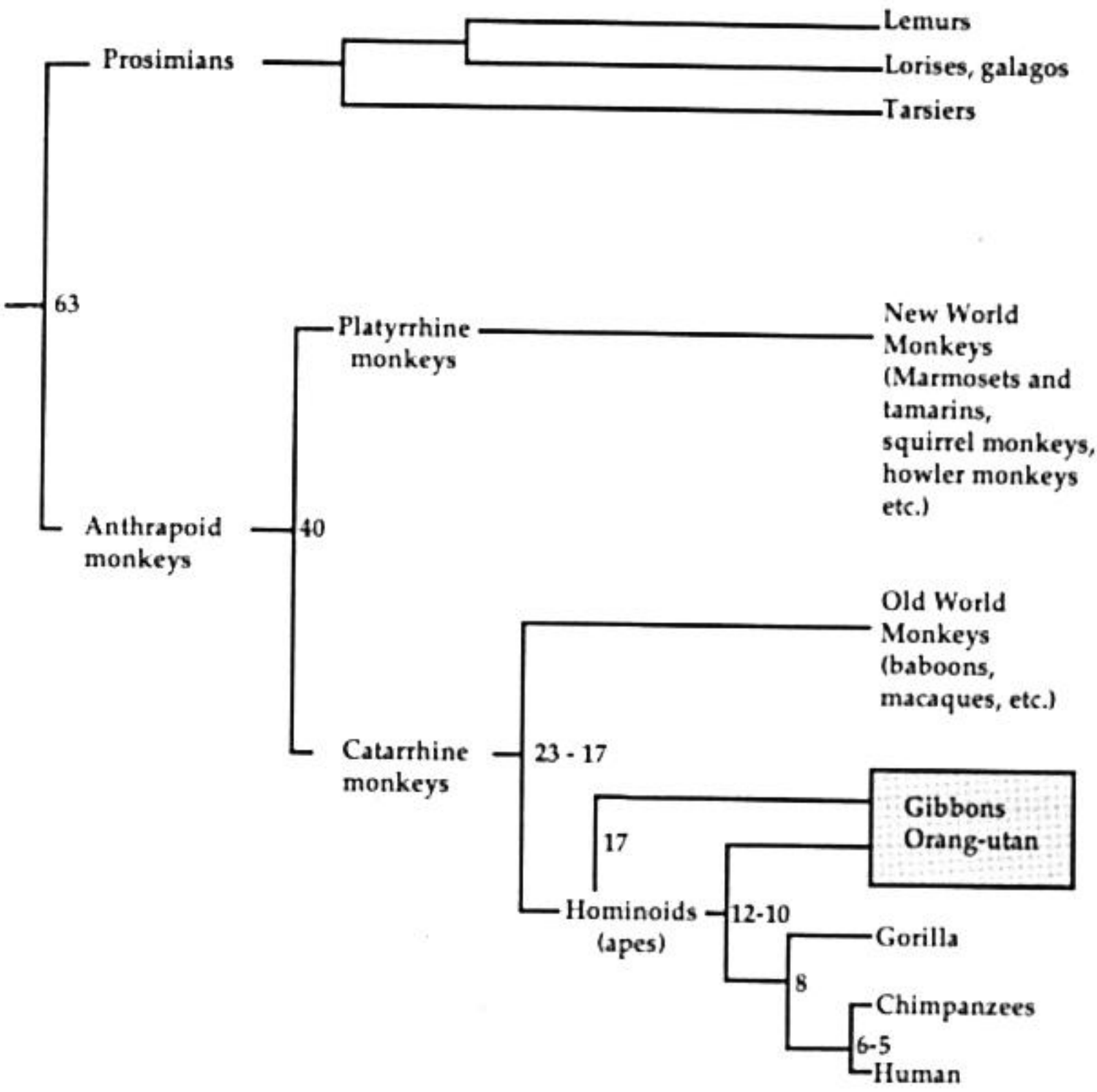


Figure 4.1 The evolutionary tree of primates showing when divergences occurred in millions of years ago. Note where the hominoid line branched from the other primates and when each of the apes evolved. The presently existing species are listed in the column on the right side. Orang-utans and gibbons occur in Malaysia. Adapted from, Kaplan, G. and Rogers, L.J., *Orang-utans in Borneo* (Armidale: University of New England Press, 1994).

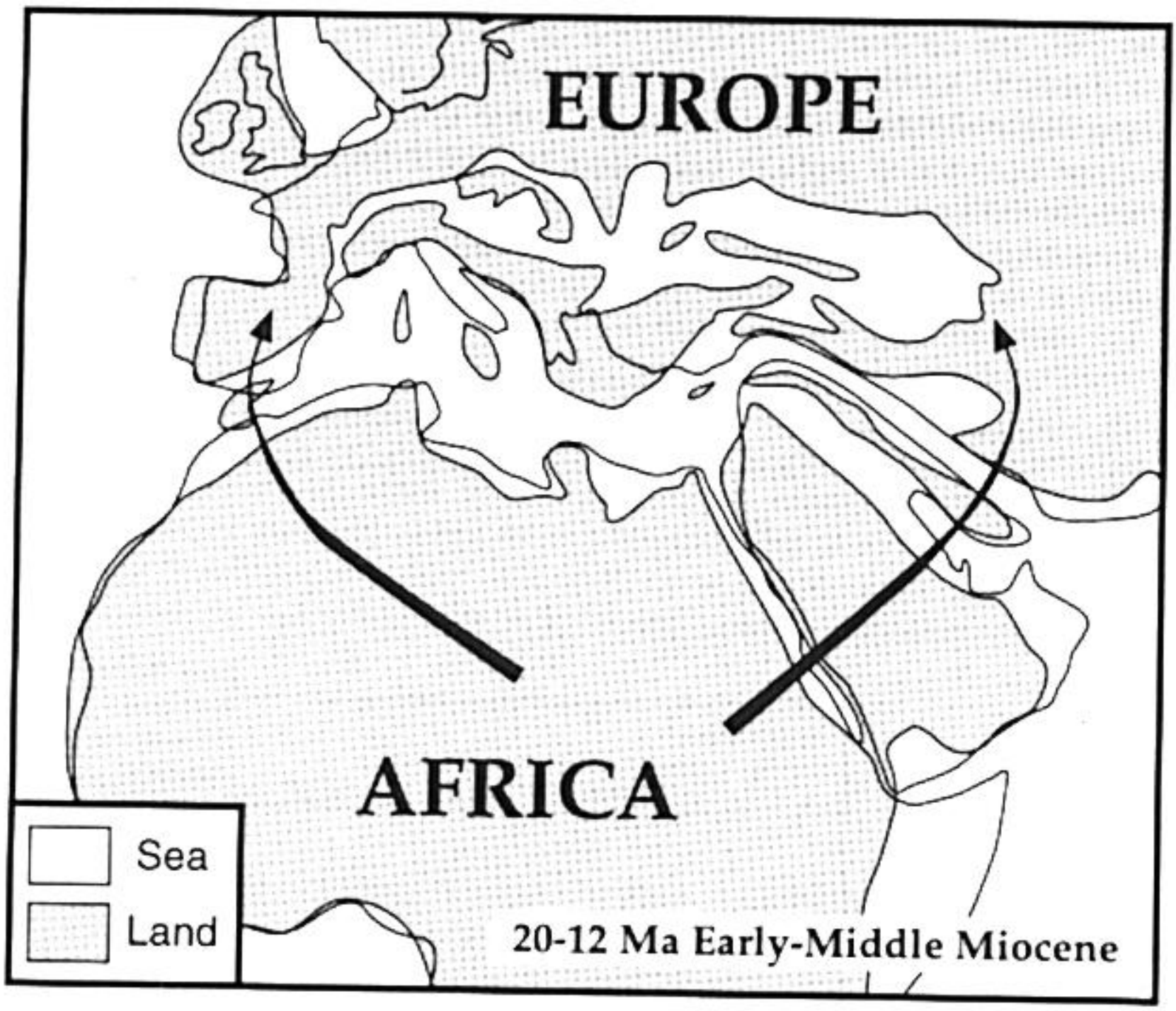


Figure 4.2 The approximate location of land masses in the Africa and European regions some 15 million years ago. The arrows indicate possible routes via which apes may have migrated from their place of evolution in North Africa to Europe. This map is a modification of the maps of 12 and 20 million years ago in Smith, A.G., Smith, D.G. and Funnell, B.M., *Atlas of Mesozoic and Cenozoic Coastlines* (Cambridge: Cambridge University Press, 1994).

This evidence indicates that orang-utans did not evolve in Southeast Asia but migrated there in more recent geological time. *Sivapithecus* is thought to be the ancestor of orang-utans and its existence has been dated to 8 to 12 million years ago, in the late Miocene epoch. Fossil crania and other bones of *Sivapithecus* have been found in the Siwaliks of North Pakistan. These apes must have looked somewhat like present day orang-utans although the skull was somewhat broader and the limbs were less mobile. They lived in trees and ate fruit much like present-day orang-utans. It seems that *Sivapithecus* may have become extinct when the dense forests and woodlands disappeared as the world's climate became colder, drier and more seasonal.

Apes have more specialised climatic requirements for survival than do monkeys. Monkeys were better adapted to life in more open habitats and

they were able to survive in those regions where the rainforest was lost, whereas the ancestral apes became extinct. By the end of the Miocene all of the ancient forms of apes in Europe and most parts of Asia were extinct, apart from some known to have been still surviving in China. Skulls of ancient orang-utans have been found in Yunnan and Guangxi provinces of Southern China, and in Laos, Vietnam, Sumatra, Java, Kalimantan and Sarawak.[2] At one time orang-utans were distributed throughout the southern part of China and extended north to Beijing, east to the islands of Taiwan and Hainan, and south and west to Myanmar, Laos, Thailand, Cambodia, Malaysia including East Malaysia, Sumatra, Java, and Kalimantan.[2] Fossils of recognisably modern gibbons and orang-utans have been dated back to the early Pleistocene, which commenced about 2 million years ago and followed the Miocene, but not earlier. This might suggest that the presence of orang-utans, as we know them today, in Southeast Asia was relatively recent, possibly within the last 1 or 2 million years.

It is wise to treat fossil hominoid evidence with some caution. Until now, the search for fossils has occurred more actively in Europe than in Asia, particularly Southeast Asia. The reasons for this are largely economic. Moreover, European-centred science extended its interests primarily to Africa and, to a lesser extent, Southeast Asia. In addition, the search for fossils in presently existing rainforest is much more difficult and preservation potential of the fossils is much lower than in the dry areas of Africa, the Middle East and Indo-Asia. Therefore, one might reason that more paleontological concentration in the Southeast Asian region will bring changes to presently accepted views on the evolution and migration of the hominoids.

Another approach to evolution that does not require the unearthing of skulls is biological dating by taking samples from living species. One way to do this is to determine the genetic similarity of species using DNA hybridisation techniques. The genetic material (the DNA) from one species is mixed with that of another species to see how much matching (hybridisation) there is between the two types of DNA. The DNA molecule is made up of a string of subunits, each of which is like a word in a sentence. Strung together these 'words' spell out the genetic messages that are passed on from generation to generation. The more of these messages that match up between two species, the closer the genetic relationship between the two species. The degree of matching between the two DNA sequences can then be translated into evolutionary distance or proximity. The further apart in time two species are in terms of their evolution, the greater the difference in their DNA, because over time the DNA accumulates mutations, which may be considered as changes in the 'word' sequences. Thus, genetic difference indicates separation in evolutionary time.

Using the hybridisation approach, chimpanzees are found to be the closest of all of the apes to humans, the pygmy chimpanzee being even closer to humans than the common chimpanzee. In fact, we share 99 per cent of our genetic material with chimpanzees, next comes the gorilla and then the orang-utan, with about 98 per cent of its genetic material the same as that of humans, and the orang-utan is followed by the gibbons. Not all of the genes are expressed (that is, not all of the messages are read out) in a species. This may explain why orang-utans are physically more like humans than are chimpanzees and gorillas. That is, even though orang-utans may be less closely related to us than the other apes, they may express more of the same genetic messages that humans express than do chimpanzees and gorillas. Little has been said about this possibility but physical structure, life-style and other aspects of behaviour are closely related, and it is conceivable that humans have more of these in common with orang-utans than the other apes. Current emphasis on DNA hybridisation techniques to determine genetic relatedness has led to persistent neglect of orang-utans in debates of human evolution. This focus takes into account the entire set of messages encoded in the genes, and thus the complete potential of the species, but it ignores the importance of the limited set of messages that actually gets read out. The details of this debate are inappropriate for this chapter, but the issue should be seen as important enough to put orang-utans in the limelight when considering human evolution.

The DNA hybridisation technique dates the evolution of orang-utans to 12 million years ago. This date is consistent with the fossil records. Also, it is not inconsistent with locating the first appearance of ancestral orang-utans somewhere around Northern Pakistan on the path of migration of the apes out of Africa and on to Southeast Asia.

MIGRATION OF THE ORANG-UTANS

It would be interesting to know when orang-utans spread from the mainland to East Malaysia and the rest of Borneo and to Sumatra and Java. According to fossil records and genetic evidence, this spread must have occurred before these islands were isolated from mainland Asia. They were still part of the same land mass up until around 5 million years ago, as shown in Figure 4.3. In fact, even over the last 2 million years, during the Pleistocene, the Malay Archipelago would have been much the same as shown in Figure 4.3 for most of the time but there would have been periods when even more land was exposed. The reason for this is that glacial periods predominated during this period and the water of the oceans was locked up in the polar ice caps, thus lowering the level of the sea and exposing more land mass. Interglacial periods occurred, although they were of shorter duration than the glacial periods. During the interglacial

periods, the sea level rose and lower lying land was flooded. The islands of Borneo, Sumatra, Java and thousands of smaller islands were formed.

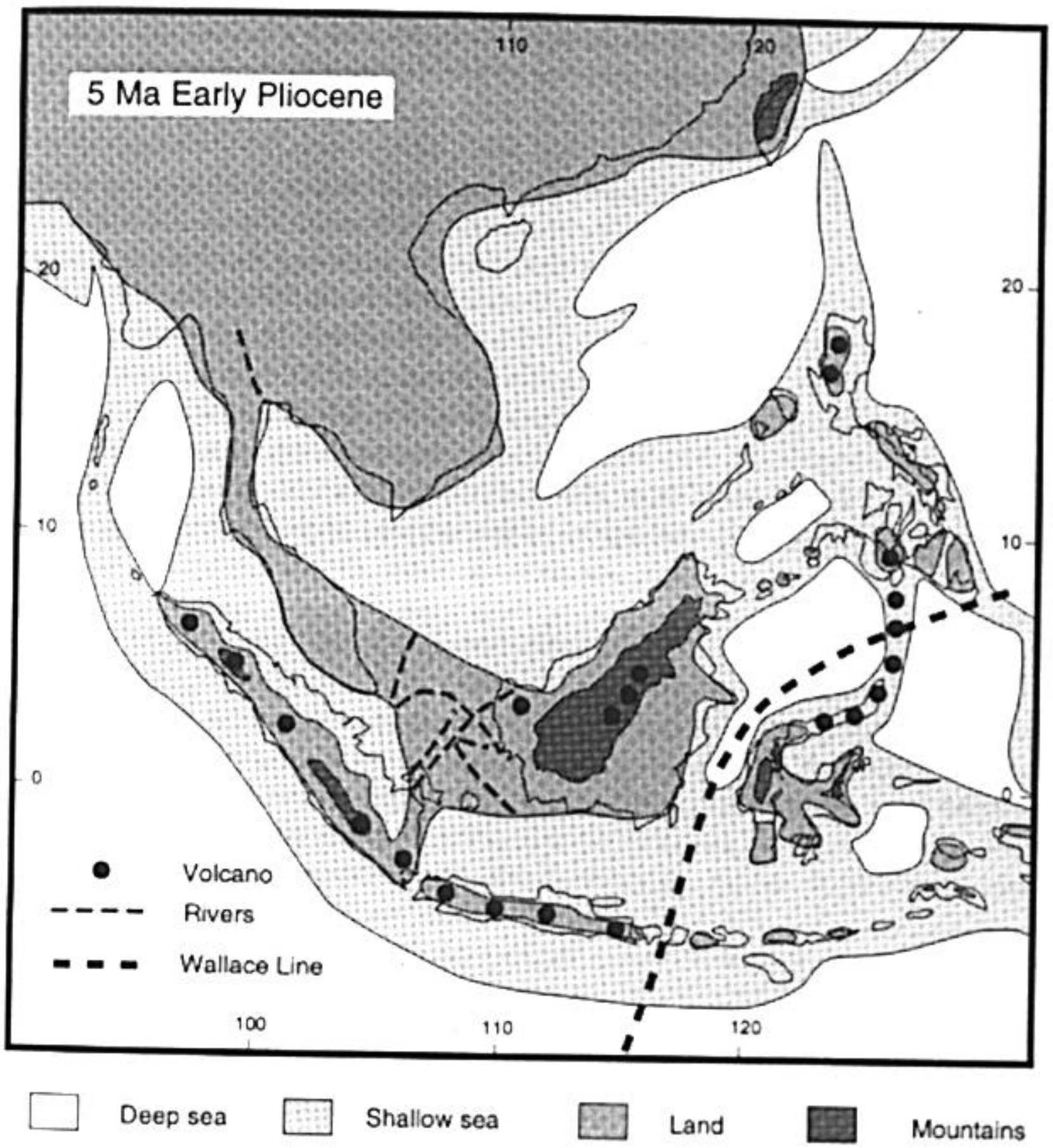


Figure 4.3 The Malay Archipelago some 10 to 5 million years ago showing deep and shallow sea, land, and mountains (based on Metcalfe's 5 Ma reconstruction of Figure 2.10 in Chapter 2). The mountain range in the land mass that became Borneo is the Crocker range of today. Approximate locations of ancient rivers are based on Morley, R.J. and Flenley, J.R. (1987) p. 55 in Whitmore, T.C. (Ed.), see list of Supplementary Reading for details.

The polar ice caps have melted about 20 times over the last 2 million years and the sea levels have fluctuated by over 200 metres. The most recent glacial period was at its coldest 18 thousand years ago and today we are in an interglacial period in which the sea level is about as high as it has ever been. Consequently, only about half of Southeast Asia is exposed at present.

Given that glacial periods have been more common than interglacial ones, there have been many prolonged periods in which orang-utans and other animals as well as plants could have moved from mainland Asia by a land route to Borneo, Sumatra and Java. They were, however, unable to spread further east onto the island of Sulawesi because that was separated from Borneo by the deep waters of the Makassar Strait. In fact, the Wallace Line runs along the Makassar Strait separating the flora and fauna of Asia, including that of Borneo, Sumatra, Java and Bali from the flora and fauna of the islands to the east of it (see Figure 4.3). The latter islands include Sulawesi, Irian Jaya, Australia and many other smaller islands that were part of the Sahul shelf, as opposed to the Sunda shelf of Southeast Asia (see Chapter 2). The Wallace Line separates the Asiatic flora and fauna of the Sunda shelf from the Australian flora and fauna of the Sahul shelf. This explains the similarity of the species of plants and animals on Borneo, Sumatra and Java, as well as their dissimilarity to those of islands further to the east.

It should be noted that, although one speaks of orang-utans crossing the land bridges, it is extremely unlikely that any individuals actually traversed the entirety of one of the land bridges. In fact, it is most likely that the species, but not the individuals themselves, crossed by slow spread over generations of individuals. The geological time-frames that we are considering here are enormous compared to the life span of a species, be it animal or plant. It does, however, remain possible that some species, including the orang-utan, made more rapid colonisation of new territory, even though this may be less probable than the slow spread of the species. It is simply not known how long various species took to spread from one region to another.

The presence of land bridges between the islands of the Malay Archipelago, on the Sunda shelf, might explain the present distribution of orang-utans, as well as many other species of animals, but it must be recognised that the passage from the mainland across to regions that later became Borneo, Sumatra and Java would not have been without considerable obstacles. In Pleistocene times major rivers flowed across the land bridging Borneo to the mainland and across that bridging Java and Borneo (Figure 4.3). For example, the huge North Sunda river flowed northwards between the bridge between the land masses that became Asia and Borneo, and others flowed across the land masses that became Sumatra and Borneo. Migrating animals would have had to cross these rivers. They may have done so on rafts of floating debris or logs. This is the most

likely way in which orang-utans made the crossing. Other species may have crossed the river by swimming, the only mode possible for the larger grazing species, but this would have been more hazardous.

The nature of the flora on the land bridges would also have created difficulties for the spread of orang-utans along the savanna corridors. The land bridges are unlikely to have supported tropical rainforest because the rainfall would have been lower during the glacial periods and the extent of the rainforests would have been reduced, whereas seasonal (monsoon) rainforests would have increased in range. Much has been said of a 'savanna corridor' along which animals could have migrated from the mainland during the Pleistocene but it remains unknown how orang-utans would have survived in open savanna. Certainly, such an environment would have been hostile to present-day orang-utans. Orang-utans of today are found from lowland forest to higher mountain forest, and they are primarily arboreal, not adapted to living away from trees. Their diet also consists mainly of the leaves and fruits of the forest. It is, however, possible that small pockets of islands of lowland forest existed in the largely savanna corridors and orang-utans could have moved between these, as it were, island hopping. In fact, judging by their densities in different types of forest, present-day orang-utans prefer lowland forest to higher mountain forest, although logging and clearing of the lowland forest is driving them into the higher areas.

Despite the relatively inhospitable habitat of the savanna corridors, orang-utans must have migrated along them, or probably it would be better to say that they moved along, to end their range at the eastern shores of Borneo and at the eastern end of Java. They could not reach Sulawesi as they were unable to cross the ocean barrier of the Makassar Strait. High mountain ranges must have offered another barrier to the spread of orang-utans within the island of Borneo. The highest mountain range in Borneo is the Crocker Range, which runs through the middle to western side of Borneo roughly parallel to the western coastline (Figure 4.3). Volcanoes within this range were active around 5 million years ago. In fact, the physical barrier posed by this high mountain range may explain the genetic differences between at least three separate populations of orang-utans now known to occur in Borneo. Genetic differences develop when subpopulations are separated for long periods of time. If the separation is sufficiently long the subpopulations so formed may evolve into separate species, which can no longer interbreed because they are genetically too different from each other. This is not, in fact, the case for the different subpopulations of orang-utans because they can all interbreed, but the subpopulations are, nevertheless, genetically different from each other. Indeed, the Bornean subpopulations (all known as *Pongo pygmaeus pygmaeus*) appear to differ from each other more than either one of them does from the Sumatran orang-utans (*Pongo pygmaeus abelii*).

The nature of these differences and similarities between subpopulations

of orang-utans suggests that there was more interaction between each of the separate populations of Borneo and the Sumatran orang-utans than between the Bornean populations themselves. It would seem that the orang-utan population on the western side of the Crocker Range (that is, in Sarawak, the western part of Sabah and a far western strip of Kalimantan) remained in contact with the orang-utans in Sumatra up until the time that the land bridge connecting Sumatra to Borneo and other regions of the mainland became submerged. The same would seem to have been the case for the interaction between Sumatran orang-utans and the population of orang-utans that were on the eastern side of the Crocker Range, in Kalimantan and the eastern side of Sabah. Over the same period of time the populations to the west and east of the range were unable to interact and evolved along separate lines. This suggests that the land bridge from Sumatra to Borneo with its major rivers was a lesser barrier to orang-utans than the mountain range in Borneo (see Figure 4.3). Very high altitudes are known to be inhospitable to orang-utans of the present day. They did once occur on Mount Kinabalu, a mountain of over 4000 metres in height in Sabah, but they are no longer found at altitudes higher than 1500 metres. In fact, as mentioned previously, the majority of orang-utans live in the lowland forests at altitudes of less then 150 metres.

One should not underestimate the effect that droughts occurring during the extreme glacial periods must have had on the distribution of orang-utans and other species in this region of the world. Indeed, some researchers consider that climatic barriers had a more important influence on the evolution and distribution of the primates of the region than did the physical barriers.[1] Periods of cold drought that confined species to remnants of surviving forest appear to explain the distribution of langurs (*Presbytis* spp.) in Peninsular Malaysia, Borneo (particularly in Sarawak), Sumatra and Java. The same may be true for orang-utans and many other species of both primates and nonprimates. In fact, it is now thought that a cold drought may have eliminated the original representatives of langurs, gibbons and orang-utans in Sumatra and that they recolonised this region at a later date.[1]

When one discusses the orang-utans that spread across the land bridges from the mainland to the land masses which became Borneo, Sumatra and Java, one should be aware of the fact that the orang-utans of that time were not the same as those existing today. There is a possibility that the now extinct and most recent ancestors of present-day orang-utans were less arboreal in their life-style. It is known that they were larger than present-day orang-utans. Although there have been occasional sightings of extraordinarily large orang-utans walking on the ground using their hindlimbs only, by far the majority of present-day orang-utans are smaller and stay most of the time in the trees. Evidence from fossilised teeth and other bones found in the Niah caves indicates that generations ago the Bornean orang-utan was much larger than the majority of orang-utans are

today.[3] They also showed more pronounced sex differences in physique than orang-utans of today.

Although orang-utans might have evolved in the trees, they may well have descended from them to live more of their life on the ground. In fact, this might have permitted them to increase in size to be larger than they are today. Thus, it is possible that large, ground-walking orang-utans had adapted to the savanna environment of the land bridges. Although nothing is known of the diet of these ancestral orang-utans and thus the availability of required foods during the period of migration, orang-utans of today eat hundreds of different types of food, including leaves, fruit and some meat. In other words, the species appears to be quite adaptable in diet, at least within the vast range of foods available in the rainforest. The migrating orang-utans might therefore have found sufficient food growing in the savanna or in the islands of forest that may have existed on the land bridges.

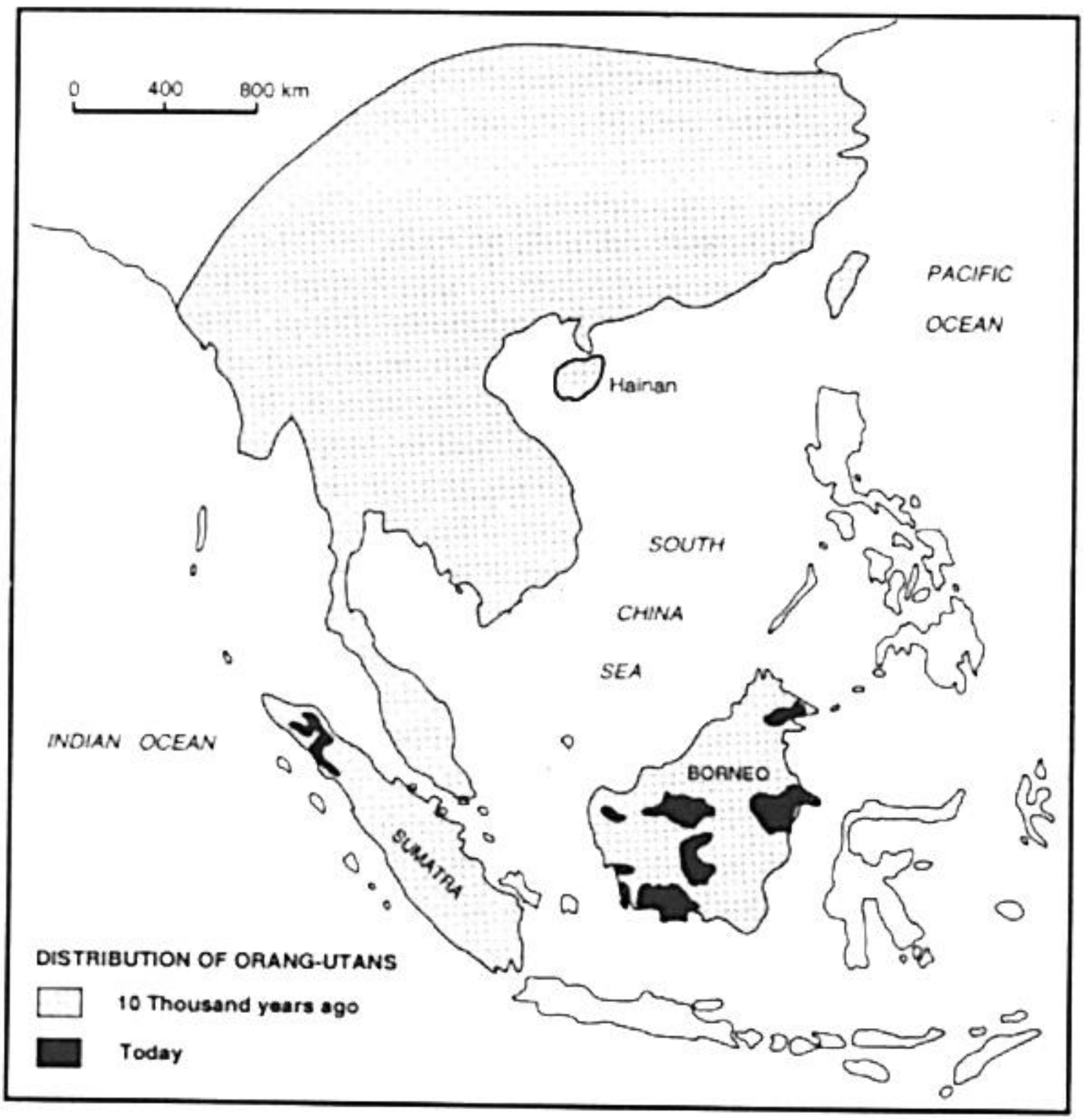
Later-developing circumstances may have driven the orang-utans back to spending most of their lives in the trees. Many researchers believe that predators at ground level may have favoured the evolution of smaller orang-utans that were more arboreal. It is interesting to note that orang-utans of today are the largest arboreal primates and they may be close to the maximum size for staying in the forest canopy. Exactly when the return to the canopy occurred is unknown. Some have argued that humans, as the only ground-dwelling serious menace to orang-utans, may have been instrumental in forcing them back to the trees. Others have placed the return earlier in evolution and in response to predation by clouded leopards and the Sumatran tiger (present in sufficient numbers in the past), and yet others have suggested that they returned to the trees to escape ground-dwelling parasites, such as leeches. The Sumatran orang-utan tends to be more arboreal than orang-utans in Borneo and the Sumatran sub-species is usually also smaller and lighter. The continued existence of the formidable ground predator, the Sumatran tiger, might be the main reason for this almost exclusively arboreal existence of Sumatran compared to Bornean orang-utans.

DECLINING NUMBERS OF ORANG-UTANS

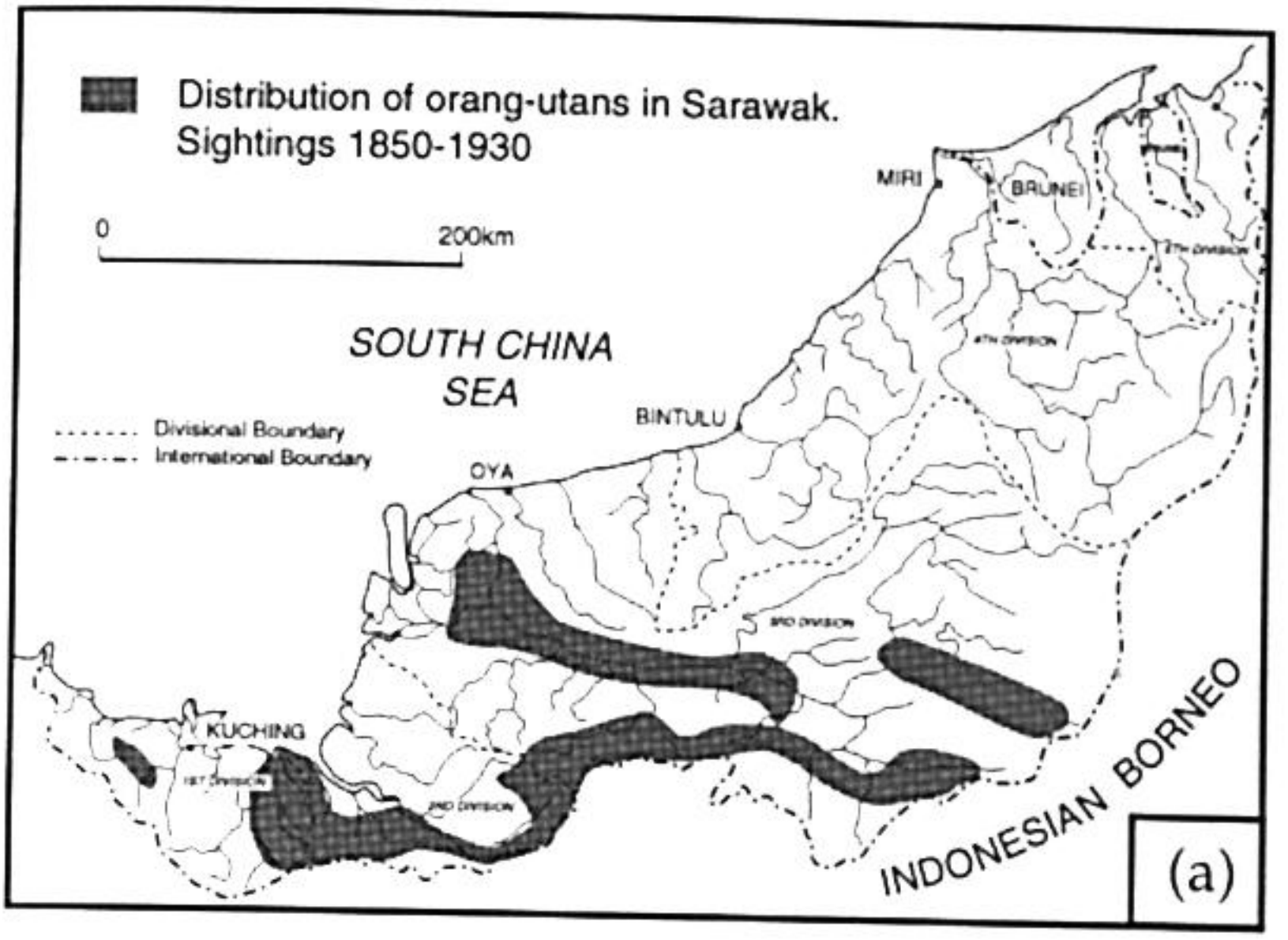
Ten thousand years ago the range of orang-utans was little different from their range in the early Pleistocene (see Map 4.1) although today it is far less extensive. Today the felling of rainforests for timber and the expansion of agriculture puts the orang-utan on the list of endangered species. Even selective logging has been shown to have a detrimental effect on orang-utans.[4] Illegal capture of orang-utans exacerbates this situation but the main threat to their existence is loss of habitat. An alarming report at the International Orang-utan Conference held in

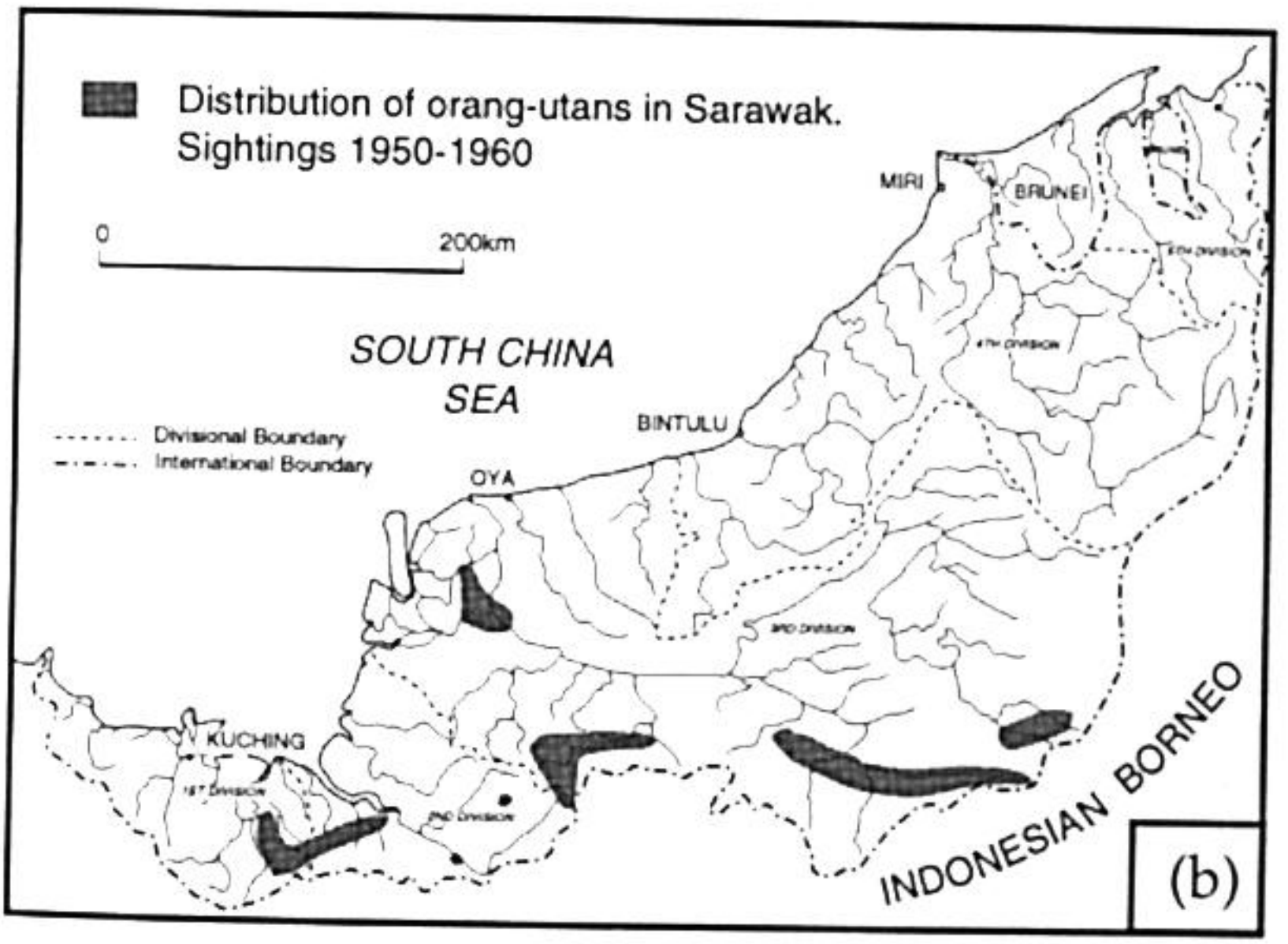
California in 1994 said that the total population of wild orang-utans in Malaysia and Indonesia has declined from 80 thousand in the 1980s to 20 thousand in the 1990s. The numbers may be even lower than this.

A survey of the populations of orang-utans conducted in 1993 arrived at the following estimations: just over nine thousand orang-utans in Sumatra (six thousand of them in the Gunung Leuser National Park and the rest outside the park in unprotected area), and 10 to 15 thousand in Borneo. To give a detailed estimate, the 1993 'Orang-utan Population and Habitat Viability Analysis Report of the Captive Breeding Specialist Group Species Survival Commission of the IUCN' stated that the total area of habitat occupied by orang-utans in Borneo was just over 22 thousand square kilometres, subdivided into some eight separate areas, and the population in these areas totals 10 to 15 thousand orang-utans.[5]

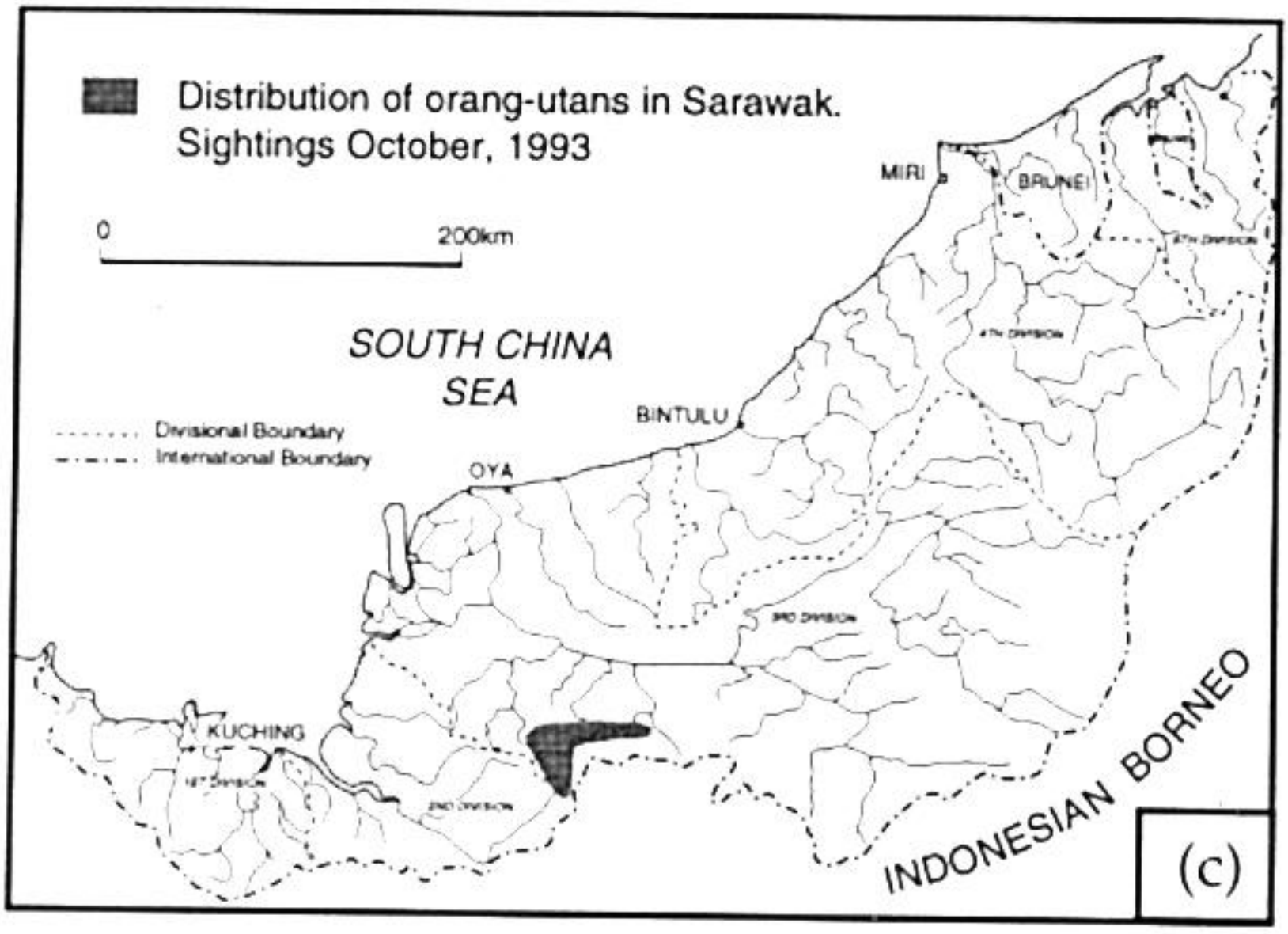


Map 4.1 The estimated distribution of orang-utans around 10 thousand years ago (light shaded area) and their approximate distribution today (black areas).





Map 4.2 continued ...



Map 4.2 The distribution of populations of orang-utans in Sarawak around the late 1800s and early 1900s (A), in the mid-1900s (B) and in 1993 (C). The source for (A) and (B) is the *Maias Report Sarawak, 1960*, and for (C) *Orang-utan Population and Habitat Viability Analysis Report of the Captive Breeding Specialist Group Species Survival Commission of the IUCN*, Oct. 20, 1993.

The estimates of population size are made in a number of ways, one of which is to fly over the forests along transect lines and to estimate the number of orang-utans from the number of nests spotted. The accuracy varies according to the habitat being surveyed. For example, nests are more easily seen in more open forest and flight paths cannot follow closely areas with cliffs. Also, it is difficult to estimate the age of a nest when viewing it from the air and unused nests remain intact for some period of time. In addition, sometimes orang-utans build new nests every day and at other times they may use the same nest again. These are sources of error in estimates of the population size. Correction factors have to be used to attempt to minimise inaccuracies. Added to this, the population sizes reported for some inaccessible regions of Borneo are nothing more than complete estimates, as no proper surveys have been conducted. In summary, the figures for population size are of limited reliability.

Map 4.2 illustrates the areas in which orang-utans have been sighted in Sarawak. It will be noted that the size of these areas has diminished alarmingly, and in 1993 there was only one area remaining. Also in 1993, only four hundred to seven hundred orang-utans were estimated to be present in Sabah. This population is isolated from all other populations of orang-utans and it is at serious risk of disappearing altogether. Small, isolated populations can be wiped out easily by disease for example. Therefore, there is an urgent need to take intervention measures to manage this population. At present there is only limited protection of the habitat of orang-utans.

In most, if not all, parts of Borneo the clearing of forest to allow the expansion of agriculture poses a serious threat to the survival of orang-utans but this, apparently, is not a major threat to the survival of orang-utans in Sabah, at least according to the 1993 "Orang-utan Population and Habitat Viability Analysis Workshop" held in Medan, North Sumatra.[5] Agriculture is, however, expanding in Sabah and large areas of forest are being cleared for plantations, particularly of oil palm. In other regions of Borneo the expansion of agriculture poses a significant and sizeable threat to the survival of orang-utans. This is the case in Kutai, on the eastern side of Kalimantan where the habitat is being destroyed through mining, and road building also has exacted its toll on the orang-utans. In fact the Kutai National Park has already been logged quite extensively and it is now under threat of being converted to mining activities, which would result in the loss of half of that region's orang-utan population of one to two thousand individuals. There is also the impact of illegal capture and trade in orang-utans but this is minimal compared to the massive effects of logging.

The density of orang-utans varies in different regions. It is highest in one region of Sumatra where there is an abundance of fig trees on which they feed. However, it is the tall lowland dipterocarp forests where by far the majority of orang-utans survive and these are being destroyed at the rate of 100 thousand square kilometres per year. At this rate the forests of Sarawak and Sabah will be gone within the next five years and with them orang-utans and so many other species. Logging has a predictable impact on local populations of orang-utans. Some orang-utans are killed during the felling of trees and others are driven into undisturbed areas with the result that overcrowding of these areas occurs.[6] In overcrowded situations the reproductive rate of orang-utans decreases and hence the population eventually declines to a lower level in both the undisturbed as well as the logged regions.

Unlike other endangered species, the orang-utan has been singled out for special protection and rehabilitation by both Malaysia and Indonesia. A number of steps have been taken to protect the species. In Indonesia the first steps were taken during the Dutch colonial period. The original Faunal Protection Ordinance which forbade the killing, trade or ownership

of orang-utans was inaugurated in 1925, and amended in 1931 and 1936. In 1994 Indonesia introduced more stringent legislation to protect orang-utans. Malaysia has followed suit. Unfortunately, these laws have been difficult, if not impossible, to police, given the nature and the size of the terrain but they may have made poaching of the orang-utan a little more difficult than before. It has been estimated that in just over two years prior to 1990 up to three thousand orang-utans were captured and smuggled out to Taiwan, where they were sold as pets or to become performers in night clubs or similar entertainment centres.[7] Until 1993, Indonesia supplied about a third of world demand in wild-caught primates.

Rehabilitation programmes are also in place in both Indonesia and Malaysia. The first Bornean rehabilitation programme was put in place by Barbara Harrisson in Sarawak in the late 1950s and early 1960s and the first rehabilitation centre at Sepilok, near Sandakan, in Sabah was opened in 1964. Sepilok has grown into a research station as well as a much visited tourist park (see Chapter 8). Semengoh, just outside of Kuching in Sarawak, was opened in 1975. It is a much smaller area than Sepilok and it is surrounded by dwellings of the human population. Also, it has a far smaller orang-utan population than Sepilok. There have been no reports stating the number of animals that have been successfully rehabilitated at these rehabilitation centres. Many orang-utans released there disappear into the forests and are never seen again, others succumb to diseases acquired from humans and yet others remain in quite close dependence on humans. There is an urgent need to publish the facts of successful and unsuccessful attempts at rehabilitation in these centres. Whatever the outcome of rehabilitation, these centres offer the possibility of research on orang-utans in closer quarters than possible in wild orang-utans and they offer visitors a far better place to observe orang-utans than in zoos. Provided the rehabilitation centres do not function as a cover for continued logging, they can continue to serve a useful purpose, but survival of the orang-utan will depend on preserving large areas of its natural habitat, not by relocating them to rehabilitation centres. There is an urgent need to declare more areas of their habitat as totally protected.

There are National Parks in East Malaysia but most of them are no longer inhabited by orang-utans, as is the case for the National Parks of Kota Kinabalu, Baku and Tunku Abdul Rahman in Sabah, and Gunung Mulu and the park at Niah caves in Sarawak.

There are few gazetted reserves in Sabah. One of them is the one hundred square kilometre Tabin Wildlife Reserve into which orang-utans are now being relocated. Another is the Danum Valley area which is within the Ulu Segama Forest Reserve. This reserve was once a part of the Sabah Foundation timber concession area and most of the area was logged selectively. This leaves its mark on the surviving species. There is currently a program of reintroducing orang-utans to the Danum Valley area. Certainly, it is sensible to release rehabilitated and relocated animals

into a region that is isolated from any population of wild orang-utans because this prevents them from being a source for the spread of disease, but relocation and rehabilitation is only a band-aid remedy for a much larger problem that must be halted by preserving the habitat of wild orang-utans.

OTHER ENDANGERED SPECIES AND FOREST DESTRUCTION

The Encyclopedia of Endangered Species published in 1994 listed 26 species of animals as endangered in Malaysia. In addition to the orang-utan, these include the Asian elephant, Asiatic black bear and wild dog, banteng, estuarine crocodile, gaur, hairy-nosed otter, helmeted hornbill, Malayan tapir, otter civet, proboscis monkey, sun bear, two species of terrapin, and the Sumatran rhinoceros and tiger.

It is a tragedy of the modern world that the tropical rainforests are being destroyed at an astounding rate. Well over one hundred thousand square kilometres of the world's tropical rainforests are being destroyed per year, a rate of loss equivalent to about two per cent of the total area of the forests. The minimum estimate for the rate of loss is one plant species and twenty animal species per day. This means that over 75 thousand species of the world's rainforests are becoming extinct per year. This rate of loss is not slowing but accelerating, and it is predicted to continue to do so beyond the year 2000. Within less than two decades at this rate, most of Southeast Asia from Myanmar to the Phillipines will be completely without forest.

Grazing species can adapt to destruction of the rainforest and, in fact, the gaur or seladang cattle (*Bos gaurus*) are believed to have come to Malaysia in the wake of forest clearings made by Neolithic humans. For the majority of rainforest dwelling species, however, loss of the rainforest means extinction and, once their numbers have fallen below a size that is sufficient to maintain the amount of genetic variability needed to adapt to new environmental conditions and to combat disease, the species has no ultimate hope of survival. For example, only five hundred Sumatran rhinoceros are surviving in the wild today, and twenty four are in captivity. These extremely low numbers place the species in extreme danger of being wiped out by disease even if their remaining habitat is actively maintained. One would not want to discourage the breeding programmes for this species that are in place, but one also has to recognise that it may be too late for this species. It is essential that the numbers of no other species be allowed to become so small. Isolation of small subpopulations of species into remaining islands of forest without communication with each other also means certain extinction. Large interconnecting tracts of primary rainforest need to remain untouched and this requires urgent designation of these areas now.

Ten countries contribute chiefly to the loss of the rainforests, and Malaysia is amongst these. The others are Brazil, Colombia, Mexico, Myanmar, India, Thailand, Indonesia, Nigeria and Zaire. The Southeast Asian rainforest has been more extensively destroyed by logging than have the rainforests in any other region of the world. Many social and economic factors have caused this situation, not all of them internal to the countries concerned. Whatever the reasons, the biological need to change this situation is more than urgent. Loss of the rainforest is the single most important factor leading to the demise of many animal species.

Hunting for food by humans who dwell in and around the forests is a problem to wildlife but it becomes a problem only after deforestation has so limited the extent of the remaining forest that the survival of species is already threatened. Over recent years the Malaysian government has singled out hunting by the Penan as a factor contributing to the extinction of animal species, but this obscures the real cause of the destruction and it shifts focus away from the massive and continuing destruction of the forests by the logging companies and companies that construct roads through the rainforest. Hunting can be carried out so that it is sustainable provided that the amount of hunting does not exceed production, and this is the way people like the Penan have lived for centuries without having a significant impact on the species of the rainforest. By contrast, heavy hunting does have serious effects on local populations, especially on those species than breed slowly, such as orang-utans and hornbills. Such heavy hunting was practised during the colonial era. In fact, it was hunting in Sarawak during this time that virtually exterminated the rhinoceros and the banteng from that region of Borneo. In addition, the tapir is believed to have become extinct in Borneo as a result of hunting in colonial times.

Selective hunting of large species also disturbs the delicate balance of species in the rainforest ecosystem. Exactly what this does is not known, but there have been studies showing that loss of primates is accompanied by an increase in the number of squirrels. This has profound effects on the forest because primates disperse seeds, the seeds of the fruit that they eat being dropped in their faeces, whereas squirrels consume seeds. Thus, the flora changes and this, in turn, leads to further changes in animal species. Many animals of the rainforest act as pollinators for some of the trees and their loss can also have marked effects on the forest itself. This is the case of the flying fox, which is hunted in Sarawak. The ability of tropical rainforests to withstand such disturbances caused by selective hunting of a single species is largely unknown. There is no question that hunting needs to be controlled. Despite this, hunting should not be promoted as the main source of threat to the fauna of the rainforest.

Similarly, poaching of animals for illegal trade to the world market, as pets, for zoos or to provide ingredients for traditional medicines, is the final straw for many species but not the primary cause of their demise.

Poaching is by no means an acceptable practice on ethical grounds or for its particular impact on the survival of species but it has a serious impact on a species only when loss of habitat has so diminished the number of surviving members of the species in the first place. This, for example, is the situation with the orang-utan, and also the sun bear (*Helarctus malayanus*). The sun bear is killed for food and medicines but the loss of its habitat is by far the greatest threat to its survival. Of course, for populations that are already on the brink of extinction, hunting must be stopped immediately, but prevention of habitat destruction well before this occurs is the only guaranteed way of ensuring the survival of species.

There is an urgent need to declare large areas of forest as totally protected from logging and hunting. Moreover these protected areas need to be connected by corridors of forest along which animals can move so that small populations are not caught in fragile islands of forest. In Sarawak only 4.3 per cent of the natural forests are totally protected, and these areas are designated as national parks, wildlife sanctuaries or nature reserves. National parks are open to public access, which compromises the fact that they are said to be totally protected. As tourism increases this will become even more the case (see Chapter 8). Fortunately, nature reserves, formally established in Sarawak in 1990, are fully protected. There are also designated areas of species diversity. Sadly, however, out of a total of 41 Centres of Plant Diversity in Southeast Asia only 16 are totally protected. These sites are selected as the world's major sites of diversity in vegetation and with them, inevitably, is an associated diversity of animal species.

Little is known about the area of forest that each species needs to ensure its survival. However, it has been estimated that large species need reserves of at least 10 million hectares in size. Considering that the entire area of Sarawak is only 7.7 million hectares, it is clear that Malaysia and Indonesia will have to cooperate in declaring large enough areas of Borneo as protected forest. Animals do not respect political barriers and their conservation will depend on recognition of this fact. We must acquire the ability to set aside human demarcations of territory for the purpose of ensuring that the fauna we know today will be present in the future. So far, no countries in the world have managed to do this, but a safe future for the flora and fauna of the rainforest, and of many other habitats, demands such international cooperation.

THE FUTURE?

All indicators show the economic future of Malaysia will be particularly prosperous. There will be enormous economic growth and along with it there will be, at least initially, an increasing population size and increasing tourism by people from all parts of the world. This bright

economic future will be coupled with a dark future for the fauna and flora of the rainforests, unless drastic measures are taken immediately. These will have to include major containment of logging practices, strict enforcement of legislation that prohibits poaching and a balanced approach to hunting that will need to be monitored closely. It is insufficient to introduce protective measures for single species and only when each is on the brink of extinction. Fortunately, protection of the orang-utan will also protect many other species living in its habitat but effective conservation for the future must be to protect habitats with their complete diversity of flora and fauna, not a species here and another there.

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5 Peoples and Cultures

Alberto Gomes
La Trobe University

THE PEOPLING OF MALAYSIA

It is almost obligatory to begin a chapter on Malaysia's peoples and cultures with a statement that Malaysia is a multiethnic and multicultural nation. Such a statement is made occasionally by Malay leaders, frequently by Malaysian Chinese and Indian cultural associations, and almost unfailingly by Malaysia's cultural tourism promoters. Malaysia's population now stands at around 20 million, divided along ethnic lines as 61.9 per cent bumiputra (mostly Malays), 29.5 per cent Chinese and 8.6 per cent Indians. Kadazans and Dayaks form the main indigenous groups of Sabah and Sarawak respectively. Several national leaders, including the Deputy Prime Minister at the time of writing, Anwar Ibrahim, have recently referred to Malaysia as an 'Asia in microcosm'.[1]

The development of a multicultural society in Malaysia began more than 2000 years ago but was especially intense during the twentieth century stemming from British colonial policies that encouraged the immigration and settlement of large numbers of people mainly from China, India, and Indonesia. A common but now largely discredited theory is that Malaysia was populated through successive waves of migrants from Mainland Southeast Asia and China.[2] It is not entirely clear when humans first inhabited the Peninsula but there are numerous archaeological sites, particularly in the northern region, with human remains carbon-dated to be about 10 000 years old. These early humans have been labelled by archaeologists as Hoabinhians. Archaeological finds in several caves such as Gua Cha in Kelantan reveal that these early settlers on the Peninsula were physically and culturally related to Mainland Hoabinhians who are said to have lived all over the Southeast Asian mainland region from Burma to the southern provinces of China between 3000 and 14 000 years ago. It is generally maintained that Hoabinhians lived by hunting and gathering and fashioned tools out of pebbles, a stone-age technology that is distinctive to these early humans. Human remains of a much earlier time possibly about 35 000 or more years ago have been discovered in Sarawak (Niah Caves) but this does not mean that Borneo was peopled long before the Peninsula. It is simply a case that evidence of human existence on the Peninsula predating the Hoabinhians has yet to be discovered.

About 3000 to 5000 years ago Hoabinhian culture was gradually replaced by another relatively more advanced stone-age culture referred to as Neolithic. Archaeologists contend that Mon-Khmer speaking immigrants from the mainland who intermarried with earlier Hoabinhians may have introduced neolithic culture on the Peninsula. Unlike the Hoabinhians, the Neolithics living on the Peninsula made fine pottery, used polished stone tools, and may have engaged in rudimentary farming, though no remains of cultivated plants prior to 1100 AD have been discovered. There is considerable consensus among archaeologists that the present-day Orang Asli (Aborigines of Peninsular Malaysia) are descendants of the Hoabinhians and the Neolithic humans. Compelling evidence for this is the linguistic linkage between many of the Orang Asli, particularly Negrito (Semang) and Senoi languages with those of people living in parts of Mainland Southeast Asia. Most of the Northern Orang Asli populations speak what linguists refer to as Austroasiatic languages. This differs markedly from the languages of the Southern Orang Asli which have been classified as Austronesian, a language family which includes most of the other indigenous languages in Malaysia, Indonesia, and the Philippines. Austronesian-speaking seafarers, migrating possibly from Borneo and Indonesia, may have begun to settle along the coasts and river mouths in the Peninsula about 3000 years ago. The current diversity observed among the indigenous peoples in the Peninsula, especially the fact that Orang Asli are divided on the basis of ethno-linguistic and racial criteria into 19 sub-groups, is said to be a product of long-term racial and cultural blending between the early Austroasiatic and Austronesian speakers. One can safely assume that there were intermarriages, some trading, and cultural exchanges between the two groups of people for at least 2000 years. They occupied and adapted to different ecological niches, leading to greater cultural differentiation and the emergence of separate cultures or groups on the basis of biophysical and ecological adaptations.[3]

Located on the crossroads of Asia, Malaysia played an important role in the longstanding maritime trade between Indian and China and subsequently between China, the Middle East and the West. Historical sources indicate that Indian traders visited the Malay Peninsula in the first centuries A.D. Although they did not settle permanently on the Peninsula, they did inaugurate a process of cultural influence that was to persist for more than a thousand years. This process, known as Indianisation, had introduced to the early Malaysians basic political ideas and practices, art forms, and popular beliefs that are still adhered to, albeit in modified forms. The numerous Sanskrit loan words such as *bahasa* (language), *bumiputra* ('sons of the soil'), *manusia* (human), *nyawa* (life), *negeri* (country), and *raja* (king) in Malay is testimony of this cultural heritage. Indian merchants were also responsible for the successive introduction of Hinduism, Buddhism, and Islam that have replaced, but

not completely, animistic beliefs and practices of the original inhabitants of the Peninsula. During the period of Indianisation, several city-states influenced by Indian political systems and supported by Indian mercantilism began to develop in Southeast Asia. The first Indianised city-state in Southeast Asia was Funan, a trading settlement on the Mekong Delta, which was reported to have had several satellite city-states, of which one was located in Kedah. In the seventh century, Funan fell to the Khmers of Cambodia and Kedah then became a vassal of another Indianised Empire, Srivijaya, which had its capital in Southern Sumatra. The Srivijayan empire gradually incorporated the coastal areas along the Malay Peninsula and parts of western Borneo and maintained tight control of the region's maritime trade which now involved the Chinese and the Arabs. By the end of the thirteenth century, Srivijaya's suzerainty over the region's seaports had ended and in the early 1400s Melaka emerged as trading centre in the region. Melaka grew out of a small settlement of Sumatran refugees. According to Temuan (an Orang Asli sub-group) legend, these refugees were said to have settled in a Temuan village that was transformed into a centre for the Melaka Sultanate. There is no reason to doubt this story. This settlement in no time grew into a cosmopolitan centre with Malays, Arabs, Indians (Gujeratis), Javanese, Sumatrans, Bugis, Borneons, Filipinos, Persians and Chinese. But the groups were evidently 'ethnically' polarised, each living in its own enclave and represented by a headman (*capitan*) from their community. As a result of Melaka's amicable relations with China, Chinese traders and envoys frequently visited Melaka and some even settled and established a Chinese enclave. With the fall of Melaka to the Portuguese in 1511, the Malay rulers and many of their people (*rakyat*) fled to other parts of the Peninsula and gradually established sultanates in Johor, Perak and Pahang. From 1500 to 1800, these Malay States received large numbers of migrants from the Indonesian islands. The Acehnese mostly settled in Perak and through clever political manoeuvring, took over the reins of the Perak Sultanate while Bugis and Minangkabau settlers established their own sultanates in Selangor and Negri Sembilan respectively. These new settlers, according to Orang Asli oral histories and legends, evidently displaced the Aborigines from their coastal settlements and drove them into the interior where many lived in fear of slave raiding at the hands of the Malays.[4]

At the beginning of the nineteenth century, Malaysia was sparsely populated with Malays, living in coastal settlements and at the mouth of major rivers engaging in mainly rice farming, fishing, and some trading of forest products; Orang Asli in the interior subsisting through foraging, swiddening, and the trading of minor forest products; and a cosmopolitan heterogeneous population in Melaka. The colonial period, especially from the 1850s onwards, witnessed a radical social transformation of the Peninsula as well as of Sabah and Sarawak with the immigration of large

numbers of mainly Chinese, Indians, and Indonesians to work in the tin-mines, rubber plantations, and other commercial enterprises (see Chapter 7 for a detailed discussion of the processes of labour migration in the 19th and 20th centuries). By the time the British left in 1957 Malaysia was truly an Asia in miniature, with people from almost every part of Asia represented in its population.

MALAYSIAN MOSAIC

Almost any tourist guidebook on Malaysia will provide a description of the country's cultural diversity, which is a major selling point of the tourism industry. In a brochure produced by Malaysia's Tourism Development Corporation (TDC), we are told:

> Malaysia's fascinating cultures are strongly evident everywhere one goes. From the typical roadside stall to the palace of royalties, the rich heritage of the nation's cultural traits continue to influence the lives of the people in this throbbing nation. The colourful cultural aspects are evident in the games people play, in exotic food that they prepare, in many artforms and pastimes, in the glorious festivals that Malaysians reverently look forward to and indeed the many facets of their lifestyles ... Malaysia's calendar is punctuated with religious holidays throughout the year. This is on account of Malaysia's multi-devotional background, where all the world's major religions are represented.[5]

It is widely known that Malaysia's population is mainly divided into Malays who are Muslims, Chinese who observe a syncretic religion combining Confucianism, Taoism and Buddhism, and Indians who are mostly Hindus by religious affiliation. However, to say that Malaysia is ethnically divided into Malays, Chinese, Indians, Kadazans, and Dayaks is a rather simplistic portrayal of the country's ethnoscape and commits gross injustice to its immense cultural diversity. Far from being internally homogeneous, each of these groups constitutes many culturally variegated sub-groups. The ethnic label Malay, for instance, covers a range of people from Middle-Eastern descent to Indonesian peoples such as Acehnese, Boyanese, Bugis, Javanese, Minangkabau, Rawa and Mandailing, and Muslims who trace their roots to the Indian subcontinent. The Malaysian Constitution defines Malays as Muslims who follow Malay customs (*adat*) and speak the Malay language. Islam is the most important factor in Malay identity as a source of solidarity among members of the community and a form of ethnic differentiation from non-Malays. Malays come together in the celebration of Muslim festivals such as Hari Raya Pausa to mark the end of the fasting month,

Ramadan. While there is recognition of a 'standard' Malay language which is prominent in official or educational usage, there are several Malay dialects spoken in Malaysia. Malays from Kelantan, for instance, speak a distinctive dialect (*loghat*) from Perak or Johor Malays. There is also considerable variation in cultural practices such as traditional dress, architecture, handicraft, artistic expressions (such as dance genres) and social organisation among Malays from different states or regions in the country. This is noted in most tourist brochures. In the TDC brochure on culture, a description of Malay wedding costumes exemplifies this diversity:

> The wedding costumes of bridal couples vary from state to state. In Negri Sembilan, for an example, the Minangkabau costume is worn as the people of this state originated from West Sumatra. The Malacca Malay bride is often adorned with a number of decorative headgear, adorable earrings, brooches, foot bangles and of course the elegant Malay dress of the state.[6]

This diversity is repeated in traditional Malay architecture with different house styles such the Melakan, Minangkabau, Kelantan, Selang, Bumbung Perak associated with Malays from different states. In terms of food, something as common as *satay* has different variants such as *Satay Johor* or *Satay Kelantan*. Each state has its Malay food speciality such as Kelantanese *ayam percik* or *nasi kerabu*, and Perak's *gulai tempoyak*. There is also intra-Malay variation in kinship systems. Malays from Negri Sembilan and parts of Melaka follow a matrilineal descent system referred to as *adat perpatih* where property and inheritance passes down the female line. This Minangkabau system of kinship reckoning contradicts the Islamic practice that is patriarchal and adhered to by Malays from the other states in a form called *adat temenggong*.

Peninsular Malaysia's Aboriginal peoples, the Orang Asli, are sometimes regarded as belonging to the Malay category. This is problematic in the legal sense since most of the Orang Asli are not Muslims, even though many of them have languages and customs similar to those of the Malays. The Orang Asli too are far from being homogenous. They form only one per cent of Malaysia's total population but are conventionally divided into nineteen sub-groups, each distinctive in terms of language, customs, and traditional religious beliefs and practices.[7]

Most Chinese Malaysians trace their cultural roots to different parts of South China, speaking different dialects and following cultural practices unique to their places of origin. There are at least nine major ethnolinguistic and provincial groups namely Hokkien, Hakka, Cantonese, Teochew, Hainanese, Hockchew, Kwongsai, Henghua and Hockchia among the Chinese in Malaysia, amalgamating into an ethnic bloc as a result of political exigencies related to surviving in a

multiethnic society. The Chinese, unlike the Malays, are not united in religion. Most practice what is locally called 'Chinese' religion, which is a blend of religious elements from Confucious, Taoist, Buddhist, and even indigenous animistic rituals, such as the appeasement of tree and land spirits (*datok*). Many have converted to Christianity, particularly the evangelical forms, while a few have become Muslims, a conversion that used to be referred to as 'entering Malay' (*masuk Melayu).* There are numerous Chinese cultural associations and several Chinese-based political parties (MCA, DAP and Gerakan), further dividing the community. Malaysian Chinese identity seems to be centred on certain cultural practices such as the lion dance and the celebration of Chinese New Year and other festivals such as the Mooncake festival. Common political interests and cultural lobbying such as the defence of Chinese educational institutions and ethnic-centred business networking of Chinese guilds also serve to unite Malaysian Chinese. Malaysian Indians are mostly Tamil speakers but there are considerable numbers of Indians from Kerala, Bengal, Gujarat, and the Punjab, making this community even more culturally and linguistically diverse than the Malaysian Chinese. While most are Hindus, many are Sikhs, Muslims, or Christians. For Hindu Indians, festivals such as Deepavali (Festival of Light) and Thaipusam serve as focal points for the celebration of Indian identity.

There are also several groups of people such as the Portuguese Eurasians, Burghers, Chinese Babas (*Peranakan Cina*) and the Melakan Chitties who trace their ancestries to communities which have evolved from the blending of cultures and peoples through intermarriage and cultural diffusion arising from inter-ethnic interactions going back several centuries.

The cultural plurality found in Sabah and Sarawak is even more staggering and overwhelming. Sabah with a population of 1.3 million comprises over 31 different ethnic groups speaking more than 80 recognisable languages or dialects. The largest group of indigenous peoples in Sabah is the Dusun who are now officially and commonly referred to as Kadazans. The Dusun are divided into various sub-groups such as Tempasuk, Penampung, Rungus, Ranau, and Tambunan, some of which differ markedly from each other in regard to cultural practices. Another relatively sizeable population in Sabah is the Murut who mostly live in the interior while along the coasts are found the Bajau who in former times were renowned as sea-nomads or sea-gypsies. In Sarawak, the main indigenous groups are the Dayaks and Orang Hulu. Dayak which means 'inland' or 'interior' covers a range of people of which Iban (formerly known as the Sea Dayaks) and Bidayuh (formerly called Land Dayaks) are the most significant in terms of population and state politics. The other groups include Kayan, Kenyah, Melanau, Kelabit, and Penan. The indigenous peoples of Sabah and Sarawak speak Austronesian languages that are closely related to Malay. There is much variation in

social organisation among the different ethnic groups. While people like the Iban, and the forest-dependent Penan have egalitarian social structures, some of their fellow indigenes such as the Kayan and Kenyah adhere to a ranked or stratified political system where members of the community are divided into classes of aristocrats, commoners and slaves. Several of the Dayak groups are noted for their unique form of settlement called the longhouse where all the households in the settlement live in a longhouse divided into individual apartments called *bilik* (room). Each unit occupying an apartment is called a *bilik* family, which has jural rights to land for cultivation. The Iban in the past were renowned as fearsome and aggressive head-hunters. Today many of their headhunting rituals have survived despite the onslaught of Christianity in Sabah and Sarawak.[8]

MODERNITY AND IDENTITY

In social science literature published before 1960, Malaysia is typically portrayed as an exemplar of a pluralistic society where the major ethnic groups are alleged to live in harmony with one another. Since there were not many inter-ethnic interactions at the time, this may not have been far from reality. The infamous 'divide and rule' policy of the British colonial administration prevented social mingling of the different ethnic groups and in fact, what developed out of its implementation was the segregation of the three major 'races' into ethnic enclaves, each occupying a separate and distinct niche within the social and economic framework. Malays mostly remained in the rural areas as subsistence farmers or peasants. The Chinese who flocked into the country to work the tin mines in the mid 1800s and early 1900s settled in the mining areas which eventually grew into urban and commercial centres such as Kuala Lumpur, Ipoh, and Taiping; while the Indians were 'imprisoned' in the plantations which brought them into the country to serve as indentured labourers.

For an effective implementation of its 'divide and rule' policy, the colonial administration propagated the idea of 'race' as natural and a basis for human differentiation. It proceeded to identify, differentiate, and classify people in Malaysia and this was by no means an easy task given the extent of fluidity and in-discreteness of social groups. The population census was one of the primary bureaucratic tools used in this regard. A seemingly benign administrative measure, the census had effectively created and reconstructed 'ethnic' groups out of mostly arbitrary criteria. This is evident especially in the way successive censuses have operated to unite diverse groups of Malays, as noted by Judith Nagata:

> In 1901, the census of the Straits Settlements separately enumerated the peninsula Malays and Sumatrans from the Javanese, Bugis (Buginese), Boyanese, Acehnese, Dayaks, and Filipinos... From 1911 onward, the sub-count only

> recognizes the separate existence of these groups, but for most official purposes the final count merely distinguishes between "Malays" and "other Malays". In 1911 and 1921, a "true" Malay was judged to include some Sumatrans, for example, Minangkabau and Rawa, but not the Acehnese, Batak, Buginese, or Boyanese. By 1947 and 1957, all the latter were aggregated with peninsula Malays as "Malaysians", but now that "Malaysian" refers to any citizen of the Federation, regardless of sub-national or ethnic affiliation, the old term "Malay" has been resurrected for the 1970 census.[9]

Through such bureaucratic manipulation, ethnic groups were formed, amalgamated, or divided. The changes to the ethnic structure and organisation were then legitimised in the National Constitution or State legal system. A set of cultural criteria such as religion, language, and 'customs' was used to demarcate ethnic groups. Ethnic differentiation and the recognition of ethnic markers and boundaries were often arbitrary, sometimes ambiguous, and usually externally imposed by the administrators, political elites, and researchers (particularly anthropologists).

The colonial 'divide and rule' policy left an indelible mark on Malaysian society. After independence, political elites continued with the manipulation of ethnicity to maintain their positions of power. The first political party to govern the country was essentially an alliance, as the party itself was named, of three ethnic-based parties–UMNO (United Malays National Organisation), MCA (Malayan Chinese Association), and MIC (Malayan Indian Congress). To consolidate their positions, aspiring political leaders were willing to voice ethnically chauvinistic views in order to be seen as championing the cause of their ethnic communities. As Harper has indicated, 'communalism was not a natural state of Malaysian society but the language through which its political predicaments were addressed'.[10] Nevertheless, there were more inter-ethnic interactions which were, however, primarily competitive for political and economic power. As one would expect, these interactions, rather than reducing, had exacerbated ethnic animosities and tension and as a result ethnic identities were zealously maintained, ethnic differences stressed, and ethnicity became the dominant motif of the country's social system.

In conjunction with this ethnicisation, there was a gradual disruption of the status quo that existed at the time of independence where Malays had dominance in the political realm and non-Malays in the commercial sector. In the political realm, non-Malays slowly wrestled some political power from the Malays as evidenced in the 1969 General Elections. However they instantly lost this, and even more political power in the aftermath of the 13 May 1969 racial riots which shook the very foundations of Malaysian society. In order to reconstruct the nation, the

government predictably focussed on resolving the ethnic problems. It introduced a number of policies notably the New Economic Policy (NEP) and the National Culture Policy (NCP) and made several constitutional amendments in 1971 aimed, as it claims, to foster ethnic peace and social justice in the country. It also enunciated the national ideological principles in a document known as *Rukunegara*. The two-pronged objectives of the NEP were outlined in the Second Malaysia Plan (1971–5):

> The first prong is to reduce and eventually eradicate poverty, by raising income levels and increasing employment opportunities for all Malaysians, irrespective of race. The second prong aims at accelerating the process of restructuring Malaysian society to correct economic imbalance, so as to reduce and eventually eliminate the identification of race with economic function.[11]

To achieve the second objective, the government introduced several programmes to provide Malays with privileged access to education, employment and economic ventures with a target for Malay control of 30 percent of capital ownership, industry and commerce by 1990. With preferential policies for Malays, there was considerable disillusionment among non-Malays who felt very much like second class citizens and this led to growing ethnic chauvinism among Malays and non-Malays. Here it seems that the state's role in ethnic politics is somewhat contradictory. It attempts to control ethnic chauvinism by barring open discussion of ethnically sensitive issues but at the same time it tends to promote 'racial' or ethnic identification through its use of ethnicity as a tool for resource allocation such as its preferential policies for bumiputras. Furthermore, ethnic identity is bureaucratically institutionalised through identity cards that state the ethnicity (*bangsa*) of the bearer.

With the prevalence of ethnic chauvinism and politics, Malaysia has become ethnically polarised. This is particularly evident on Malaysian university campuses where students segregate on the basis of ethnicity in classes and canteens as well as with participation in student associations, politics and social functions.[12] Despite attempts by university authorities to resolve this problem, a recent media report reveals that ethnic polarisation is still very much entrenched in Malaysian university campuses.[13] Such polarisation is perhaps a slight exaggeration of social life outside the campus. While national leaders and the local media tend to portray Malaysians of different cultures living in ethnic harmony and cooperation (*muhibbah*), this is not the case in everyday life in Malaysia. There is little inter-ethnic mingling, usually restricted to the workplace, commercial dealings, and state-sponsored activities such as sports, performances, and parades. Craig Lockard observed ethnic polarisation even in popular culture in Malaysia:

> Malaysian popular culture inevitably reflects the ethnic

> heterogeneity. Chinese, especially those educated in Chinese-medium schools, have tended to favor films and recordings from Singapore, Taiwan, and Hong Kong ... Indian pop culture has mostly been imported from India, especially in the form of films (chiefly musicals) and tapes ... The numerically and politically predominant Malays, especially the Malay-educated, have chiefly followed Malay, Indonesian, and Middle-Eastern sociocultural developments and have constituted the essential market for Malay-medium pop music and popular culture.[14]

Most of the analyses of ethnic polarisation emphasise the NEP and its overzealous implementation as the source of ethnic chauvinism that in turn is linked to the widening ethnic cleavages. In the main, these analyses tend to ignore the role of the National Culture Policy in the process of ethnic nationalism and polarisation.

NATIONAL CULTURE POLICY AND ETHNIC DISCOURSES

In the process of nation building, countries such as Malaysia have sought to establish a national culture. In the case of Malaysia this is particularly problematic in light of its ethnic plurality. The nagging question in the early years of its nation building process was how might it institute a national culture that will transcend its separate ethnic cultures without compromising its cultural diversity. This problem became even more poignant after the bloody racial riots in May 1969 which were seen as symptomatic of an ethnically divided society lacking a common national 'soul' or culture. To resolve this issue, in 1971 the Ministry of Culture, Youth and Sports held a congress on national culture and an overwhelming majority of the approximately 1000 delegates who were invited to this meeting were Malay intellectuals and politicians. Of the 52 papers that were delivered at the congress only four were by non-Malays.

To facilitate the development of a 'national soul' for Malaysia, the meeting advocated a national cultural policy (NCP) with the following three principles:

(1) The National Culture must be based on the indigenous culture of this region.
(2) The suitable elements from other cultures can be accepted as part of the National Culture.
(3) Islam is an important component in the moulding of the National Culture.[15]

Predicably, this clearly Malay-centric policy was not popular among non-Malay Malaysians. However, immediate non-Malay protests were somewhat muted as the May 1969 racial riots were still fresh in the minds of the people. As time passed, non-Malay objections to the policy and its

implementation in particular, became increasingly vociferous and considerable debate about the specific issues of the cultural policy ensued, especially in the late 1970s and early 1980s. There were essentially three aspects of the NCP that attracted concern and contention. The first was in regard to the ambiguities and varied interpretations of the principles. The second was in relation to the implementation of the policy that the Non-Malays contended was somewhat arbitrary and at times overzealous. The third was focussed on the underlying philosophy of the NCP that contradicts, according to Non-Malay commentators, the accommodative spirit of the National Constitution and the Rukunegara.

In regard to the first principle, the point of contention was on the meaning of the concept 'indigenous culture'. Although the policy does not state which indigenous cultural elements should form the basis of the national culture, it is evident from the third principle and later official statements that 'indigenous culture' refers to Malay culture. Several non-Malay cultural organisations have sought clarifications as to whether the concept includes Malay dress, food, art and social organisation.[16] This is however clarified in a number of directives from the Malaysian, predominantly Malay, bureaucracy. For example, the Director-General of Education in 1984 issued the following circular to all local schools detailing the ground-rules for holding a cultural show and general student conduct:

> When school children perform dances, they should perform traditional dances such as inang, zapin and joget. They may also include other dances such as kuda kepang. Foreign dances may only be included if they are suitable and confirm to the principles of the National Cultural Policy. Ballet dances are allowed. Schools are encouraged to get their pupils to sing traditional and patriotic songs. Any song banned by the Government should not be included in any programme. Pupils must be encouraged to perform on traditional musical instruments such as the gamelan and the kompang. Pupils should also be given every incentive to take up traditional hobbies such as gasing, congkak and wau. Pupils should also be encouraged to participate in useful activities such as handicraft, photography, art and craft. The vast wealth of traditional theatre should be tapped. These include makyong, bangsawan and boria. All costumes worn by pupils for any function should reflect the national culture.[17]

It is obvious that this circular is Malay-centric as all the dances (with the exception of ballet!), musical instruments, hobbies, drama genres listed are Malay and conspicuously, and perhaps intentionally, absent is any mention of the cultural practices of other Malaysian ethnic groups.

This focus on Malay culture certainly facilitated the process of cultural revivalism among particularly the urban-based, middle-class Malays. Most

of the papers delivered at the 1971 National Culture Congress were on Malay arts, handicrafts, music, dance, and literature and they had a lasting impact on the Malay elites who became more inwardly oriented with an enhanced pride in their 'traditional' culture. From the 1970s onwards several government-sponsored organisations were set up to promote and manage Malay cultural development. This cultural revivalism has led to a Malay 'culture industry' engaged in the production and 'marketing' of what it defined as Malay culture, usually in the form of handicrafts, dances, films, and music for the appreciation of mainly Malays and tourists, and the establishment of cultural museums and theme-parks, such as Mini Malaysia in Melaka. As Joel Kahn has observed, the museum displays and cultural performances seem to be popular among the growing urban-based Malay middle-class in its quest to keep in touch with its 'traditional culture'.[18]

The issue of indigeneity is especially contentious in Malaysia, usually confined to closed and private questioning by non-Malays as it is deemed seditious by law to do so publicly and breaking this law carries stiff penalties. Malays claim to be indigenous to Malaysia on the basis of being descendants of the subjects of the Malay sultanates that ruled the Malay states before European colonialism. As mentioned earlier, they share this claim of indigeneity with the non-Malay 'natives' of Sarawak and Sabah and the Peninsular Orang Asli, all of whom, together with the Malays, constitute the category *bumiputra*. Advocates of the NCP frequently evoke the glory of the Melaka Sultanate and pre-colonial Malay feudalistic rule in the Malay Peninsula to support their claim to Malay cultural supremacy over the other ethnic groups in Malaysia and the Malay-centrist position of the NCP. This historical background is also emphasised in order to oppose the principle of cultural equality and democracy. It is somewhat evident that the salience of this history is in the eyes of only the Malay community and not shared among all the ethnic groups in Malaysia. In the case of the Malay discourse, the historical focus is invariably on the Islamic period of Malaysian history, intentionally neglecting the periods of colonialism and 'immigrant' history as well as the pre-Islamic era of 'paganism' and Hindu and Buddhist influences. In line of this agenda, school textbooks on Malaysian history have been rewritten. For non-Malays, the pre-Islamic period when both India and China maintained a strong cultural influence over the inhabitants of the Malay Peninsula, and the non-Malay contributions, primarily economic, in the early years of the formation of modern Malaysia are invoked to underwrite arguments for cultural pluralism. For example, several major Malaysian Chinese organisations in a Joint Memorandum asserted that:

> We do not deny the existence of the Malacca Sultanate and the continuity of the Malay Sultanate system but neither can anyone deny the legitimate existence of the other ethnic

> groups and their contribution to national construction. Malaysia was formed according to the 1957 Federal Constitution; in terms of political system, we are no longer a feudal kingdom, but a country founded on Constitutional Monarchy; in terms of the system of administration, legislation and economy, it is basically a continuation of the British and not the Malay system; and in terms of the system of culture, multi-culture has long replaced the earlier mono-Malay culture.[19]

History is not only a temporal mode of consciousness but it is also spatialised. This is evident in a particular case in Malaysia concerning a landmark in the 'historical town' of Melaka called Bukit Cina literally meaning Chinese Hill. This landscape is a 'time-less' expression of Chinese connection with and settlement in the early days of the Melaka Sultanate. According to history, both Malay and Chinese, some time in the middle of the fifteenth century the Melaka ruler, Sultan Mansur Syah (1446–59) is alleged to have married Princess Hang Liu, daughter of the Emperor of China. She arrived in Melaka with five hundred Chinese 'youths of noble birth' who settled in Bukit Cina.[20]

In the mid 1980s, the Melaka State government announced plans to develop Bukit Cina into a commercial and administrative complex but after much furious protests from Chinese-based political parties, succumbed to pressure and shelved them. The Chinese strongly asserted that Bukit Cina was primarily a Chinese burial ground said to be the largest one outside China and maintained that to avoid the wrath of their ancestors it should not be disturbed. However, there is more to this. For the Malaysian Chinese, a major part of their history, especially their connection with the 'founders' of Malaysia, is articulated in the landscape and it is this very landscape that is a continual reminder to Malays of early Chinese presence. The Melakan State's plan to develop Bukit Cina may be interpreted as an attempt to 're-write' a landscape of historical significance to the Chinese.

While the first principle is contentious because of the cloudy issue of indigeneity, the second is deemed problematic because of its ambiguity. It has been argued that the principle leaves open the questions of what elements of other cultures should be absorbed in the national culture and how should this be done. Furthermore, the non-Malay cultural associations in their protests have pointed out the lack of clarity in such aspects as who has the right to make the selection of culture or make the decision as to which non-indigenous cultural elements are acceptable and on what grounds. The various statements by government leaders on this matter indicate much arbitrariness in the operation of this principle. In response to a Chinese appeal for the lion dance to be accepted as an aspect of national culture, the Minister of Culture, Youth and Sports in 1974 announced in Parliament that the lion dance could not be absorbed into

Malaysian culture as 'it is a Chinese dance and reflects the characteristics of a culture which grew outside the region'.[21] This implies that national culture should not incorporate elements from cultures that originate elsewhere. Similarly arguing against the assimilation of non-Malay cultural elements, Ghazali Shafie, a prominent Malay politician, stated in 1979:

> Not only are these elements incongruous to the environment here but their propagation is a hindrance to the emergence of a national culture. Their proper place is the museum where they can be exhibited as manifestations of an archaic culture and perhaps also serve as materials for anthropological and sociological research. They are no longer functional in their present context and serve only as emotional crutches for the sentimental few.[22]

In a somewhat less extremist position, the Culture and Tourism Minister announced in 1987 that 'elements of the various other cultures can also be adopted as long as they are not opposed to Islam'.[23] If some of the non-Malay cultural elements are considered acceptable for inclusion into the National Culture the question raised by some of the non-Malay organisations is how should they be absorbed. Ghazali Shafie advocated a rather interesting way as to how the Chinese Lion dance may be accepted albeit in a modified form. He suggested that the dance be transformed into a tiger dance accompanied by music from the gong, flute, tabla or gamelan.

The free hand of the bureaucracy to dictate the selection of cultural elements is a bone of contention between the Malays and the non-Malays and a source of much discontent among the non-Malays. There are numerous instances where the overzealous implementation of the NCP has deprived non-Malay communities of the free enjoyment of their culture and the opportunities to develop it. Police restriction on the performance of lion dances by Chinese Malaysians is a case in point. Another instance relates to the use of Chinese language as revealed by the major Chinese organisations in their joint memorandum:

> In recent years, the State and Local governments initiated many regulations restricting the use of Chinese or the size of Chinese characters on advertisement billboards, name plaque of corporations, decorative arches, school buses, etc. There have even been instances of the forced removal of the name plaque of Chinese shops with potentially severe repercussions.[24]

Indian Malaysians have also complained of similar restrictions. For example, in a joint memorandum on national culture by ten major Indian associations in Malaysia, it was revealed that Indian ladies have been told not to wear the saree to certain functions and religious and cultural troupes from India were often denied official clearance to perform in Malaysia.

The aspect of the policy that appears to be of greatest concern to non-Malays is the third principle. Several observers have noted the resurgence of Islam in Malaysia. For example, David Banks writes:

> Wider use of head coverings by Malay women, the growth of Islamic schools and village education, the national attention given to youth groups that draw upon Islamic ideals and values to inspire nationalistic fervor, and the growth of other social groups focused on propagation of the faith (*dakwah*) are potent signs of this resurgence.[25]

As further indications of this process, he notes the rapid increase of Islamic places of worship, the growing support received by the Islamic Party as reflected in the recent voting patterns, and the Malay requests for a more extensive application of *syariah* laws to eventually replace the secular legal system in Malaysia.

In step with this resurgence and much to the indignation of the non-Malays who are mostly non-Muslim, advocates of the NCP have called for more serious efforts in implementing the third principle. There have been several instances where such calls seem to have been heeded. Among these include the introduction of a compulsory course on Islamic civilisation in the local universities, the performance of Islamic rituals at public functions, the inclusion of Islamic teachings in the school curriculum and an increase in daily Islamic programmes on public radio and television. Non-Muslims have openly expressed their concerns and apprehensions in respect to the growing Islamisation. Some of these non-Muslim concerns were presented in a document prepared by the Malaysian Consultative Council of Buddhism, Christainity, Hinduism and Sikhism (MCCBCHS) in 1986. The document focussed on two issues: the imposition of *syariah* laws to replace civil law and the religious discriminations. In respect to the first issue, the council indicated that non-Muslims would not be treated as 'equal partners' as they cannot give evidence against Muslims in a *syariah* court nor hold key posts in the government. The Council also argued that women would be discriminated against as according to *syariah* laws the witness of one man counts for that of two women. The document indicates that as it is there are numerous instances where non-Muslims are discriminated against. It reveals that in most town structural plans there is a disparity of proportions for the building of mosques, temples, and churches. For example, in the town of Ipoh the allocation ratio for mosques is 1 to 800 compared to the 1 to 5000 for non-Muslim places of worship while the spatial requirement for mosques is 0.6–1.0 hectare which is substantially higher than the 0.4–0.8 hectare for temples and churches. Furthermore, non-Muslims have complained of the difficulty and frustration in obtaining building permits for their temples and churches, the harassment of foreign non-Muslim priests by the Bureaucracy especially the Immigration Department, the removal of crosses in mission schools, and

the distorted write-ups of religion other than Islam in school text-books.

THE POLITICS OF CULTURE

Most of the non-Malay protests concern the bureaucratic interpretation and implementation of the NCP. It is apparent that they object to the Malay-centrist and assimilationist position of the NCP and the rejection and gradual devaluation of their ethnic cultures. They also reject the Malay proclamation of 'one language, one culture' in the development of a Malaysia's national culture. Following a multicultural and diffusionist approach, they argue that national culture should be allowed to evolve at its own pace and on its own through a natural blending of cultures and they usually invoke the development of Malaysian cuisine as a case in point. As the Social Justice Reform Group Aliran, observed:

> There is no doubt at all that as far as food is concerned, Malaysians have begun to cross ethnic barriers. What is equally significant is that this has been taking place without any directions from anyone or any cultural policy on what constitutes Malaysian food. It shows that sometimes communities absorb each other's cultural characteristics through a process of interaction which is accomplished without interference from anyone. Indeed one can even argue that if there had been a policy on food and culture, it is not unlikely that rejection, and not absorption, of the other community's food, would have been the order of the day simply because people do not like to be forced into adopting a particular type of food or dress.[26]

In effect, the NCP has politicised culture and made Malaysians more aware of cultural differences among themselves. As Kahn has argued, these cultural constructions are more imaginary than real, an outcome of the intellectualising and politicising of cultural differences by elites and political leaders.[27] Culture as a result has emerged as an important 'commodity' in Malaysia and Malaysians have become increasingly conscious and protective of their own cultural heritage. There is also an on-going trend of cultural, especially religious, revivalism in Malaysia. This is said to be in response to Malay cultural nationalism and Islamic revivalism. There are numerous evidences of this trend but the following are some cases in point. It has been noted that a growing number of English-educated, middle-class Chinese parents have been sending their children for special Mandarin classes and participating more actively than before in Taoist and Buddhist functions. Many have joined new fundamentalist Christian religious groups, a movement that has effectively accentuated the cultural differences between Chinese and Malays. Indians seem to have become conspicuously more Hindu in their

orientation. Since the 1980s, the annual Hindu Thaipusam ceremony at Batu Caves near Kuala Lumpur has attracted an increasingly number of devotees and spectators, reaching about a million in 1997. People began to 'consume' what they saw as 'their' culture and as the sociologists have argued, this consumption legitimates social differences. While the consumption of their own culture is seen as reinforcing their ethnicity, the adoption of Malay culture is viewed by non-Malays in general as being acquiescent to Malay hegemony and a traitor to their own 'culture'. Basham relates a typical instance:

> A Chinese student who one day wore a "baju kurung", a traditional Malay dress, "just for something different," found her casual tampering with an emblem of ethnicity gained friendly comments and stares from Malays but evoked sarcasm from Chinese who asked one another, "Is she Chinese or is she Malay?"[28]

Another interesting trend in Malaysia is cultural competition. There are numerous examples of such competition but the following few cases nicely illustrate this phenomenon. In the 1980s Malaysians built two architecturally magnificent religious places, a mosque and a Chinese temple. At the bequest of the Sultan of Selangor, the splendid Shah Alam mosque, claimed to be the largest in the Southern Hemisphere, costing the state almost half a billion ringgit was constructed. Muslim dignitaries all over the world were invited for the opening ceremony, which was grand and lavish. The Sultan acquired much prestige from this 'conspicuous consumption' in face of much envy from his royal counterparts. At about the same time of this function, the Chinese were celebrating the opening of the spectacular Thein Hou temple located on prime real estate on a hill, not far from the city centre of Kuala Lumpur. The building, lavishly adorned, was financed through donations from numerous Chinese 'cultural' organisations in the country. In 1988 one of the displays in the ground floor of the temple was a dragon made out of cloth claimed to be the longest ever made which evidently is listed in the Guinness Book of Records. Another Malaysian feat to enter this book is the Malaysian flag that covered the front of Angkasa Puri, the State Radio and Television Building. This was seen as a Malay feat. In May 1991 the Malaysian Chinese Association proposed to build an 8 hectare cultural city estimated to cost five million ringgit. It is intended that the 'city' will serve as cultural centre and depository for Chinese literature and artefacts but the proposal was hastily shelved after many protests from Malay leaders. It should be pointed out that this kind of competitiveness is not only restricted to the ethnic groups but seems to be a preoccupation of Malaysia in general. Building the tallest twin towers, the longest shopping complex, and the biggest and most modern airport in the region clearly illustrates Malaysia's obsession with accomplishing superlative feats.

VISION 2020

In 1991, Dr Mahathir announced a new goal of nation building for Malaysia that he called 'Vision 2020'. He envisaged that by the year 2020 Malaysia will be a fully industrialised country with a truly united *Bangsa Malaysia* (Malaysian 'race'). As Harper indicates, in this rhetoric:

> *Bangsa Malaysia* represents not only the culmination, but also the end of nationalism. Whereas earlier nation-building had attempted to create a hybrid and generated suspicions and tension, the *Bangsa Malaysia* will be based on people's own cultures, values and religions.[29]

Several commentators have argued that this seemingly accommodative policy is one of many evidences of the declining prominence of ethnic politics in Malaysia. The other evidences include the rising number of Malay students in Chinese schools, the liberalisation of the educational system, the promotion of English language in schools, and the drop in ethnic 'championing' by the political parties. As James Jesudason notes:

> The rise of business influence in UMNO has reduced racial championing considerably. Even UMNO Youth, which had regularly politicised economic decision-making along ethnic lines, has become more concerned with national economic development as a whole ... The choices Malaysians are making are increasingly based on pragmatic rather than ethnic considerations. There has been a steady increase of non-Chinese studying in Chinese primary schools: from 2530 in 1971, to 9617 in 1978, 17 309 in 1989, and 21 508 in 1993, of whom some 75 per cent are Malay.[30]

We are told that this is a new kind of Malay (*Melayu Baru*), one who is pragmatic, innovative, rational, self-reliant and tolerant. Malays are exhorted to adopt the personality traits of *Melayu Baru* to prepare themselves for the challenges of the next century. What was seen to be needed is not just a new kind of Malay but also a new kind of self-confident Malaysian who is prepared to take on the world, guided by a new national motto 'Malaysia can-do' (*Malaysia boleh*). In the last few years Malaysia's leaders have boasted of achievements whether on the sporting field or in launching its own satellite or erecting the world's tallest building as evidence that Malaysia 'can do' or 'is able'. In their endeavour to achieve, Malaysians are exhorted not to forsake their 'culture'. In keeping with this view, the national slogan for Malaysia Day in 1996 was 'culture determines achievement'. This focus on, or one could even say, obsession with culture and morality in general could be seen as an attempt to arrest what many in Malaysia see as a decline in morality and Asian values stemming from the country's rapid industrialisation and the growing influence of Western cultures. In 1994, the local media gave

coverage to two new practices – *lepak* (loafing) and *boh-sia* (sexual promiscuity) – among youth, adding to the social ills arising from delinquency and drug abuse. This sparked a moral panic in Malaysia when it was found that many of the young involved were children from dysfunctional middle class families. Such phenomena were seen as a symptom of Malaysia's cultural and social disintegration, purportedly caused by westernisation and industrialisation.

In terms of inter-ethnic interactions, the question is whether we are witnessing the demise of ethnic politics in Malaysia. The fact that ethnicity still figures prominently in everyday social interactions in Malaysia and people are still divided and identified on the basis of 'race' indicates that we have not really seen the end of ethnic politics in the country. Some commentators have argued that Malaysia current economic boom has served to divert attention away from ethnic problems that may arise again at times of economic contraction or stagnation. Currently, Malaysians, irrespective of ethnic background, appear to share a common vision for the future – an industrialised and united nation.

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6 Politics

Malaysian Political Development from Colonial Rule to Mahathir

Cheah Boon Kheng
Penang, Malaysia

The political system practised by Malaysia's multi-racial society since its formation as a modern state in 1963 has been a fairly complex but successful one. It is a parliamentary democracy, which functions within the framework of constitutional monarchies and a federal structure. The parliamentary opposition is officially recognised, but is so small in size and so weak and disunited that it has no hope of ever being an alternative government. The system reflects the political dominance of the Malays and their control of the administration as indigenous masters of the country. The Malaysian Constitution guarantees 'special rights' for the Malays, or *bumiputra* (sons of the soil), which are also extended to the 'natives of Borneo'. These rights had been agreed to by the Chinese and Indian leaders in 1955 as part of an 'historic bargain' with Malay leaders prior to Malaya's independence in 1957. Malaya joined with Singapore, Sarawak and Sabah in 1963 to form Malaysia, but Singapore left the federation in 1965. Under the 'bargain', in return for citizenship, freedom of worship and the right to use their own languages, the non-Malays accepted the 'special position' of the Malays; Malay as the national language; Islam as the official religion; and the Malay rulers as constitutional monarchs.

It was not until after Malaya's independence in 1957 that minorities were entitled to claim some of the same citizenship rights as the Malays and other indigenous races. During this period, however, the Malays felt that they had lagged behind the non-Malays who fared better economically and were reported to have acquired a disproportionately large amount of the country's wealth. After the 13 May 1969 inter-racial riots, the government adopted the New Economic Policy to raise the economic position of the Malays and to promote racial harmony. It was proposed to redistribute 30 per cent of the country's wealth to the Malays by 1990. The Government also embarked on the objective of assimilating Chinese and Indians within a Malay cultural identity, a task which is far from successful.

The tasks of achieving political stability and racial harmony among Malaysia's multi-racial society have presented challenges to successive elected governments since independence. The three major component parties of the present ruling coalition, the Barisan Nasional (or National

Front), each representing the Malays, Chinese and Indians, have been in power without interruption since independence, in the course of which they have successfully won over opposition parties to join their ranks.

In this chapter I intend to discuss the historical development of politics in Malaysia during the administration of four Prime Ministers since independence. In this necessarily abbreviated survey I shall look at the genesis of the multi-racial society during the colonial period, and the growth of constitutional government, nationalism and the relationship between ethnicity and politics. Through such an examination I hope it will be possible to present some ideas of the present political system of Malaysia.

THE COLONIAL PERIOD

It is probably not an exaggeration to state as Richard Allen has done that it was Britain which 'created for the first time the elements of a nation, without perhaps fully intending to do so'.[1] It was due to rivalry over inter-European trade and expansion in the Eastern seas that led to the British acquiring initially Penang, then Singapore and Melaka (previously taken over in 1795) and their formation into one administrative unit, known as the Straits Settlements, in 1826. The British used these territories as important footholds into the Malay peninsula. As free ports, the Straits Settlements were economically prosperous, and attracted traders and immigrants from the Indonesian, Bornean and Philippine islands, as well as from China, India, the Middle East and Europe. It was the economic prosperity of the Straits Settlements which led to the rapid development of a multi-racial society and the Western economic penetration of the Malay peninsula.

With regard to the various communities in Malaya, Britain, however, always accorded first place to the Malays, as the treaties with the Malay rulers served as the basis for establishing British influence. Whether in the acquisition of the Straits Settlements or in the later annexation of the Malay states, the British put themselves forward as protectors of the Malays, who were regarded as the indigenous masters of the country.

Of the immigrant groups, the Chinese arrived in larger numbers than the others and appeared to have been the most eager to exploit the opportunities in Malaya for making wealth. Besides mining tin on Bangka island (off the coast of Sumatra) and in Perak in the late eighteenth and early nineteenth centuries they also traded in British-ruled Penang, Singapore and Melaka. The British annexation of the Malay states of Perak, Selangor and Sungei Ujong in 1874 was a further fillip to their large-scale immigration, followed soon after by Indian labour migration. This was because the British found that the Malays preferred to engage in their traditional pursuits rather than be involved in the modern

sector of the Malayan economy, while the Chinese and Indians, however, were willing to migrate to Malaya to work in the tin mines and tree crop plantations.

Undeniably, the British laid the foundations of the present political and administrative structures of the country. The system of British Residents and British Advisers may be said to have been the basis for the present system of Chief Ministers and *Mentri Besar* of the 13 states of Malaysia. The federal structure was first set up in Kuala Lumpur, which became the Federal capital, for the Federated Malay States (FMS) of Negri Sembilan, Selangor, Perak and Pahang in 1896. In 1909 Siam transferred its overlordship over the northern Malay states of Perlis, Kedah, Kelantan and Trengganu to Britain, which then introduced British Advisers in these four states as well as in Johor in 1914. But the federal structure was not extended to these five states, as their Rulers were reluctant to join the federation. Consequently, the federal structure developed only within the FMS right up to 1941. Nevertheless, it served as the basis of administration for the post-war Malayan Union in 1945, the Federation of Malaya in 1948, and later the Federation of Malaysia, which came about in 1963, all three retaining Kuala Lumpur as the Federal capital. For the office of the Prime Minister, its beginnings probably lay first with the appointment of the Resident-General of the Federated Malay States in 1896 until the change of its title to Chief Secretary in 1911, when it fell within the office of the High Commissioner. When the Malayan Union was established in 1946, the High Commissioner's post became known as Governor, but it reverted to that of High Commissioner again when the Federation of Malaya replaced it in 1948.

It was not until 1931 that a Malaya-wide census[2] revealed that immigrants outnumbered the Malays in their own country. Malay newspapers began sounding alarm bells that alien immigration had to be halted immediately. In fact, as early as 1903 Malay objections had been voiced openly against the colonial immigration and labour policy, but such criticisms were blunted by British explanations that the immigrants were transients and by the introduction of so-called 'pro-Malay' policies over the next decade or so – the opening of the Malay College in 1905; the establishment of the Malay Administrative Service in 1910; and the implementation of the Malay Reservations Enactment in 1913. The last was introduced to prevent the sale of Malay rural land as well as land especially reserved for Malays to non-Malays. However, the 1931 census report indicated that about one-third of the Chinese and one-fourth of the Indians were local-born and were already showing a trend towards permanent settlement in the country.

In spite of the British policy of giving first preference to Malays, the Chinese and Indians began making demands for equal treatment and for places in the administrative service and for higher education. While the British had earlier conceded to Chinese representation on the Straits

Settlements Legislative Council and on Malay State Councils, Indian representation on the Straits Settlements Legislative Council was granted only in 1923 as a result of an initiative from the Government of India.[3] The British had not yet conceived the idea of Malayan citizenship for local-born Chinese and Indians, nor was there a movement to demand this right. The loyalties of most Chinese and Indians to their respective homelands were still very strong.

On the whole, the British administrators performed a fine balancing act of granting concessions first to the Malays and then to the other races. This has led to some critics describing the colonial policy as 'divide and rule' or of 'playing off' one race against the other.[4] At the same time as the British introduced 'pro-Malay' policies to meet the rising demands of Malay nationalism, they also tried to placate the demands of the other races. For instance, in the field of education, the British set up the Malay College in Kuala Kangsar in 1905 to train administrators from the sons of Malay royal and aristocratic families. In 1910 they established the Malay Administrative Service, and in 1922 the Sultan Idris Teachers Training College. To offset these concessions to the Malays, the British established in 1905 the King Edward VII College of Medicine in Singapore, after the Straits Chinese had succeeded in raising the necessary funds in support of their campaign of a local medical school. Following demands from the non-Malays, the British set up the Raffles College in Singapore in 1928 to cater for higher education in the humanities. Thus, although the 'pro-Malay' policies appeared to discriminate against Chinese and Indians, they were frequently offset by major Chinese gains in other areas such as business, labour and education, while the Indians were generally satisfied with gaining jobs in the public and private sectors, and with the open atmosphere for business opportunities.

However, by 1941 a nascent Malay nationalist movement had already emerged. While Malay leaders were critical of British economic and immigration policies, and identified the non-Malay presence as a serious threat to their dominant political status, their ranks were divided and they did not speak with one voice. They were, therefore, forced to look inwards to resolve, first, their internal divisions and second, to forge a common identity and present a united front to take on both the British and non-Malay challenges. While there were various Malay associations and organisations, both religious and secular, advocating Malay unity on either religious or ethnic grounds, none seemed to reflect their sentiments better than the State provincial associations, such as the Persatuan Melayu Selangor and the Persatuan Melayu Pahang. Each Persatuan Melayu (Malay Association) pledged loyalty only to its respective state's Malay ruler, who was also the association's patron. In 1939 and again in 1940, the State organisations came together at a national congress to try and establish a peninsula-wide organisation, but on both occasions it failed to materialise due to provincial and ethnic differences on how to

define a Malay.[5] It was not until after the Second World War that the Malays succeeded in setting up a national organisation, the United Malays National Organisation, or UMNO.

The Japanese Occupation of Malaya (1941–5) was in many ways a wastershed in Malaya's history. The Japanese administrators mishandled race relations which resulted in an outbreak of inter-racial violence and bloodshed between Malays and Chinese in May 1945, about four months before the end of the war. Japanese massacres and persecution of Chinese had created a Chinese-dominated armed resistance movement. Additionally, Japanese 'pro-Malay' policies bred resentment and envy among the Chinese towards the Malays, and Malay cooperation made the Malays appear to be the chosen instrument of the Japanese. The clashes which occurred initially in the Batu Pahat and Muar districts of Johor state spread later to the Teluk Anson districts of Perak. At the end of the war, when the British armed forces returned, they found in Batu Pahat and Muar, some 4000 and 10 000 refugees respectively. Although the racial identity of these refugees was not mentioned in military reports, it is believed that they were mostly Chinese, who had been displaced from the Malay rural areas. The arrival of the British military forces led to a momentary lull in the fighting, but the clashes soon resumed throughout the country until April 1946 when they ceased, largely due to efforts by the British officials, Malay Sultans and Chinese community leaders to re-establish calm and harmony in the affected areas.[6]

Postwar Malay Nationalism

The British post-war constitutional plan for Malaya, the Malayan Union, which was announced in September 1945, further divided the ethnic communities. The Malayan Union was to be a unitary state comprising all the Malay states and the settlements of Penang and Melaka and administered by a British Governor, while Singapore would be a separate state under its own Governor. Under the Malayan Union, non-Malays would be offered citizenship based on birth and residential qualifications. The powers of jurisdiction of the Malay Rulers would be transferred to the British Crown. They would be reduced to being merely symbols of the Islamic religion and Malay community leaders. The British Parliament would legislate on behalf of the Malayan Union under the Foreign Jurisdiction Act. This would dispense with the prewar treaties with the Malay rulers and transform the Malay states into colonies. Although the Malay rulers signed treaties agreeing to the Malayan Union plan, many claimed they had done so under duress. Some of them had been told that if they did not do so, they might not be confirmed as Rulers as they had been appointed by the Japanese during the war. When news of this leaked out, Malay opposition built up in the country. Mass rallies in support of

the Malay Rulers were held throughout the country. At these rallies it was made clear that the Malays opposed the offer of citizenship by *jus soli* (on the basis of birth) to members of the non-Malay communities as it would confer equality of status with the Malays. Another argument which was put forward was that the prewar treaties had conferred upon the Malays proprietory rights over their homeland, which were being abrogated by the Malayan Union plan. They insisted that the British restore Malay predominance.[7]

The British Government realised that Malay opposition was formidable. It was even supported by former British Malayan Civil Service officials (the 'Proconsuls') in London. They therefore agreed to rescind the Malayan Union plan. A settlement was reached in negotiations between the British authorities in Malaya and the Malay rulers and representatives of the UMNO, which had been formed in May 1946 by a national congress of Malay organisations convened by the prewar Persatuan Melayu Selangor to oppose the Malayan Union. The president of UMNO was Datuk Onn bin Jaafar, a prominent Johor aristocrat who delivered fiery speeches during the anti-Malayan Union campaign. He has been credited with getting the British to rescind the Malayan Union. In Malaysian history books he is often referred to as the 'father of Malay nationalism'.

It was agreed that the Malayan Union would be replaced by a Federation of Malaya comprising all the Malay states and the settlements of Penang and Melaka headed by a British High Commissioner, while Singapore would remain on its own and be governed as a colony under a British Governor. Under the Federation of Malaya Agreement of 1948, the sovereignty of each Malay state and its ruler was restored. The Malay parties agreed that non-Malays who fulfilled certain birth and residential qualifications could be eligible for Federation of Malaya citizenship. When the terms of the Anglo-Malay accord were published, the non-Malay communities were furious that they had not been consulted. A British committee, however, later invited non-Malay representations, but its final report showed that a majority of the non-Malay proposals were rejected. The committee agreed only to recommend to the Anglo-Malay parties that the conditions for eligibility to Federation of Malaya citizenship be relaxed in the light of non-Malay representations.

The Federation of Malaya was inaugurated on 1 February 1948. However, in mid-June, the semi-legal Malayan Communist Party (MCP) launched an armed insurrection, having decided that constitutional struggle was useless as its political and trade union activities had been restricted at every turn by the British authorities. Many of the MCP's front organisations and trade unions had opposed the Anglo-Malay Federation of Malaya accord. Its allies in the All-Malaya Council of Joint Action–Pusat Tenaga Rakyat (AMCJA–PUTERA) coalition, comprising Malay and non-Malay parties, had also campaigned against the Federation plan.

When the uprising began, many of the MCP's Malay allies fled underground or took up arms with its guerrillas. The AMCJA–PUTERA anti-federation campaign between 1946–8 marked the first efforts at a non-communal approach to Malayan politics.

The Formation of the Alliance

To contain the communist insurrection, the British authorities declared an Emergency throughout Malaya and introduced censorship, curfews, identity cards and restricted movement of food and medical supplies. The Emergency lasted until 1960. However, by 1957 Britain was desperate to end the insurrection quickly as the mounting financial burden of the war was affecting its own economy. Britain therefore decided to grant Malaya independence, and on 31 August 1957 handed over the administration of the country to an elected Alliance coalition government led by Tunku Abdul Rahman, the new leader of UMNO. He had taken over from Datuk Onn after the latter had resigned in 1951 over UMNO's refusal to open its doors to non-Malays. Besides UMNO, the Alliance coalition comprised the Malayan Chinese Association (MCA) and the Malayan Indian Congress (MIC). Where Datuk Onn failed in his non-communal approach towards politics, the Tunku (Malay title for 'Prince') succeeded. Although he was unable to make UMNO accept non-Malay members, he did succeed in getting it to work together with other ethnic parties by forming an alliance with them. The Tunku and the UMNO struck a bargain with the MCA and MIC in 1955, in which the non-Malay parties accepted Malay political hegemony in exchange for citizenship rights. As part of the independence agreement, it was agreed between the Tunku's Alliance government and Britain that, in view of the on-going communist insurgency and the fact that the country had not yet developed its own armed forces, Britain would continue to provide military security by retaining its armed forces and bases in Malaya until such time as they were no longer needed.

THE TUNKU'S ADMINISTRATION (1957–1970)

The Tunku has been called 'Father of Malayan Independence' with some justification. After the general elections of 1955, he held the post of Chief Minister of the elected transitional Alliance government until independence in 1957 when the post became known as Prime Minister. During these fragile, formative years he achieved political stability and multi-racial harmony, which were essential for Malaya's survival. The style of his Alliance government was based on compromise, consensus

and reciprocity. This was a pattern that was followed by successive governments under different Prime Ministers. The Tunku acknowledged that despite UMNO's supremacy in the Alliance, the non-Malays could drive hard bargains and make concessions. In fact, 'the essence of Alliance bargaining was not equality but mutual dependency combined with a willingness to cooperate and accomodate.'[8]

The Tunku's leadership had elements of great maturity, pragmatism and moderation and showed an ability to control ethnic hostility. In handling these issues, he tested Malay forbearance and loyalty to the limits. In 1970 when he stepped down from office voluntarily after the inter-racial riots of 13 May 1969, he was criticised by the Malays for overly accommodating the non-Malays. With hindsight, one may say that the Tunku's role had been a difficult one. Although Malay political predominance was a reality, he used it judiciously to accommodate the non-Malays in order to avoid inter-racial conflicts, but when the riots occurred he realised that it was time that someone else should take over his job.

Malaya's first 1955 Federal Legislative Council elections was an example of how the Tunku had persuaded his UMNO party to make compromises and to accept the Alliance concept of inter-racial unity. As only a very small proportion of non-Malays had become Federal citizens, the first electorate was predominantly Malay. The registered electorate in 1955 comprised approximately 84 per cent Malays, 11 per cent Chinese and less than five per cent Indians. UMNO members, therefore, insisted that the Alliance field 90 per cent Malay candidates, but the Tunku rejected the suggestion. He threatened to resign and got his way. Consequently, the Alliance fielded 35 UMNO, 15 MCA and two MIC candidates in the 52 constituencies. Of the 52 candidates, 51 won. UMNO lost one candidate to the Pan-Malayan Islamic Party (PAS). The elections represented a test for 'UMNO discipline and support', and the Alliance concept: enough Malays voted for Alliance non-Malays, often competing against Malay candidates, for all 17 non-Malay candidates to win; the Malays voted for the Alliance because UMNO told them to do so.[9]

However, in the 1959 elections Malay anxieties rose over the higher percentage of non-Malay voters which had increased as a result of the citizenship provisions of the 1957 Constitution. The Chinese now made up approximately 36 per cent of the electorate and the Indians 7 per cent. The MCA asked for 40 seats, 25 seats more than in 1955 as the number of parliamentary constitutencies had also increased, but the Tunku rejected the request. He whittled down the number of candidates for the MCA. In the end, the Alliance fielded 69 UMNO, 31 MCA and 4 MIC candidates. The Alliance won 74 of the 104 seats with 51.5 per cent of the popular vote.

Until the outbreak of the 13 May 1969 inter-racial riots, the Tunku had always described himself as a 'happy Prime Minister'. His toughest years, however, were from 1963 to 1965 when he had to deal with two major

problems: Confrontation with Indonesia over the formation of Malaysia, and Singapore's thorny participation within Malaysia. Malaysia had been formed in August 1963 by joining the three British colonies of Singapore, Sarawak and Sabah with Malaya into an enlarged federation following an agreement between the Malayan and British governments. Indonesia opposed Malaysia on the grounds that it was a 'neo-colonial plot' to encircle the former. In the light of Indonesia's Confrontation, during which Indonesian paratroopers landed in Peninsular Malaysia, the Tunku successfully appealed to the public for loyalty and patriotism in a time of crisis. In the 1964 elections, the Tunku's Alliance government received overwhelcoming endorsement by winning 89 of 104 parliamentary seats with 58.3 per cent of the popular vote.

However, shortly after joining Malaysia, Lee Kuan Yew, the leader of Singapore's ruling party, the People's Action Party, raised 'sensitive issues' by challenging the terms of the historic inter-racial 'bargain'. Lee campaigned for a 'Malaysian Malaysia', urging communal equality and an end to Malay political predominance. He even infuriated the Malays by saying they were no more indigenous than the other groups. As a result, race riots broke out in Singapore in 1964. As Lee attempted to form new political realignments among political parties and continued to stoke racial sentiments, the Tunku felt he could no longer tolerate Lee's challenge without incurring further unrest in the country. On 19 August, 1965 he announced Singapore's expulsion from Malaysia.

Although Confrontation ended in 1966, the inter-racial tensions which Lee Kuan Yew's 'Malaysian Malaysia' campaign had aroused continued to ferment partly because of the controversy surrounding the National Language Bill of 1967 which was aimed at making Malay the sole official language of the country. Chinese language groups also began making demands to the Government for the establishment of a Chinese-language university. Consequently the 1969 general elections proved to be the most emotionally charged since independence. The election results were disappointing for the Tunku because for the first time his Alliance coalition lost its parliamentary majority. The Alliance won 66 out of 103 seats, with 48.5 per cent of the popular vote. In the state-level elections, it did not secure a majority in the Selangor and Perak state assemblies; it also lost control of the state of Penang to the opposition Gerakan Rakyat Malaysia and the state of Kelantan to the opposition Parti Islam. The riots which occurred on 13 May 1969 have been attributed to many causes, one of which was certainly Malay despondency and anger at non-Malay threats and challenges at Malay predominance. The Government proclaimed an Emergency, suspended Parliament and established a National Operations Council under the directorship of the Deputy Prime Minister, Tun Abdul Razak. It ruled jointly with the Cabinet under the Tunku, but all power in reality rested with Tun Razak. The riots led to a change in the political system, following mounting Malay criticism of

the Tunku's leadership. In September 1970 the Tunku retired and was succeeded by Tun Razak. The Malaysian Parliament was not restored until February 1971.

In any assessment of the Tunku's leadership, it cannot be denied that he exerted a powerful influence during this period. While he was autocratic at times, he tolerated criticisms from the parliamentary opposition and always enjoyed a good debate. He practised what could be described as 'parliamentary democracy with an essential element of benevolent autocracy'.[10] However, unlike Datuk Onn, he accepted the reality of communalism and its political process, knew its dangers and was prepared to use firmness to check any racial trouble. Under his administration, people were arrested and detained under the Internal Security Act for alleged communist activities or for defying the government. Besides the expulsion of Singapore from Malaysia, the Tunku was also responsible for the removal in 1965 of the Chief Minister of Sabah, Donald Stephens, who sought greater autonomy for the state following the separation of Singapore (it was believed that Stephens' dismissal was related to alleged intrigues on the part of British officers in Sabah). In 1966 the Chief Minister of Sarawak, Stephen Kalong Ningkan, was also removed for the same reason. Both actions were motivated by fear that Sabah and Sarawak might follow Singapore's path of separation.

Although a benevolent autocrat, the Tunku, however, was a man who enjoyed life, loved good food and sports and often would take time off for his favourite game, golf. Despite his royal background, he had a common touch and until his last few years in office was extremely popular. Even after his retirement, he was greatly loved and admired by the people. His death in 1992 released an unprecedented outpouring of grief from people of all walks of life, from the sultan to the ordinary man-in-the street.

TUN RAZAK'S ADMINISTRATION (1970–1976)

Tun Abdul Razak as Deputy Prime Minister had to wait in the wings for at least 15 years to take over the administration until the Tunku was ready to step down, so that when the time came for him to be Prime Minister he was a very tired and sick man. The stresses and strains of office took its toll on him. While still in office he died suddenly in London where he was undergoing medical treatment. Unlike the Tunku, he was an indefatigable administrator, who seldom took time off to relax. He held two other ministerial portfolios, those of defence and rural development. He paid great attention to the development of the rural areas, which he frequently visited. He was responsible for laying the infrastructure of modern roads in all of Malaysia's rural areas, so that they were easily accessible to towns and administrative centres.

Tun Razak made two major contributions to Malaysian politics: the

first was to revise the Tunku's formula of the multi-racial UMNO–MCA–MIC Alliance by winning over and incorporating several opposition parties into an enlarged coalition, the National Front (Barisan Nasional), which replaced the Alliance; the second was to introduce the National Economic Policy (NEP) to help uplift the economic status of the Malays. A consummate politician, he had the ability of solving any crisis. As Director of the NOC during the short emergency after the May 1969 riots, he was given absolute powers, but showed that he was not a dictator. He assured the people that emergency rule was temporary, and kept his word. He preferred to rule by consensus. In the absence of Parliament, which had been suspended, he set up a National Consultative Council which comprised representatives of various races, classes and creeds and which met to discuss national problems and measures to restore the country to normalcy. On 31 August 1970 the ban on political activity was rescinded, but political utterances were subject to restrictions established by amendments to the Sedition Ordinance, which made it illegal, for example, to question the 'special rights' of the Malays, the position of the Malay rulers or the status of Chinese-language and Tamil-language primary schools.

More significantly for the Malaysian political system, Tun Razak decided to change the 'rules of the game' and to shed 'the democratic excesses of the old system'.[11] Where the Tunku had stood for ambiguity and temporising about Malay political dominance, Tun Razak decided that Malay political dominance was not only to be clearly emphasised, but would become a reality. His Malay-based government had decided to come to terms with Malay nationalism. As a first step, the Malay language was to replace English as the medium of instruction in education one year at a time, from the primary level to the university. The Education Minister announced the implementation of this policy in 1971. This meant that by 1979, all schools and universities would use Malay as the medium of instruction. Next, under the NEP, the government would play an active role in promoting the participation of Malays in the modern sectors of the economy; setting aside capital for loans, encouraging joint ventures and establishing large government corporations. The government would not only be backing Malay entrepreneurs, but would be competing on their behalf. State corporations were to be set up utilising government capital, and when they showed profitable returns were to be handed over to Malay interests. However, the targets for restructuring the economy 'would be met in the framework of a rapidly expanding economy which would allow for reasonably large non-Malay economic growth and even for increased activity by foreign-owned enterprises'.[12] The fruits of these long-term measures became very much evident within the next two decades, especially under the present administration of the fourth Prime Minister, Datuk Seri Dr Mahathir Mohamad, who took the NEP to new heights of the Malaysian economy never dreamed of before by the Malays.

Tun Razak was able to accomodate the political right, left and centre in his thinking, policies and government. He recruited many Malay leftists and radicals into his government, appointing them as advisers, deputy ministers or parliamentary secretaries. One explanation for this openness in his political thinking was that he was briefly a member of the Fabian socialist group in London while he was a law student there.[13] The Fabians were a moderate group who got along well with both leftwing and conservative intellectual groups. This explains why he was able to form the enlarged Barisan Nasional coalition without much problem.

The first coalition which he approved of was that between the leftwing predominantly Chinese Sarawak United People's Party and the Sarawak Alliance on 8 July 1970 to govern the state of Sarawak. This was followed by the coalition between the Malayan Alliance and the Gerakan Rakyat Malaysia on 13 February 1972 to rule the state of Penang; the coalition between the Alliance and the People's Progressive Party (PPP) on 15 April 1972 to share power in the UMNO-dominated Perak state government and the PPP-dominated Ipoh Municipal Council; and, finally, on 28 December 1972 the Alliance–PAS coalition in the states of Kelantan and Trengganu and in the Federal Government. The reasons which motivated these opposition parties and Tun Razak to form the coalitions are complex and have been well discussed elsewhere.[14] Nevertheless, a large part of the credit has to go to Tun Razak for having conceived of these coalitions and for forming the Barisan Nasional on 1 June 1974 to accomodate these parties together with the three original Alliance parties (UMNO–MCA–MIC). Only two other opposition parties remained outside these coalitions – the predominantly Chinese Democratic Action Party (DAP), which won 13 parliamentary seats in 1969; and the leftwing Partai Sosialis Rakyat Malaysia (PSRM), which was unrepresented in Parliament. These coalitions were timely as they preceded the general elections in July 1974 – the first to be held since the 1969 riots and which gave the Barisan Nasional a massive victory. The Barisan Nasional won 135 out of the 154 parliamentary seats contested.

Just prior to the elections, Tun Razak established diplomatic ties with China and made an official visit to China. His meeting with Chairman Mao Zedong was well received by the Malaysian Chinese. During the elections large billboards showing the two leaders shaking hands were displayed by several Barisan Nasional component parties. Despite his assertive and successful strategies on behalf of the Malays, Tun Razak's achievements, especially the NEP, are ironically not well remembered by the Malays today. They have taken what he had achieved too much for granted.

TUN HUSSEIN ONN'S ADMINISTRATION (1976–1981)

Like his brother-in-law Tun Razak, Tun Hussein's health was ailing when he took office as Prime Minister. Tun Razak hand-picked him as his Deputy Prime Minister when the incumbent Tun Dr Ismail died suddenly. The son of the late Datuk Onn Jaafar, the first president of UMNO, Tun Hussein had been one of the three vice-presidents of UMNO. When Tun Razak appointed him as UMNO's Deputy President, he automatically succeeded as Deputy Prime Minister. Unlike Tun Razak, however, he appeared to be an extremely indecisive man, and often allowed crises to solve themselves. His public image was one of formality, correctness and aloofness, and not someone who was outspoken and easily accessible to the Press. According to Gordon Means, he assumed office from 'a fairly weak political base and with a number of serious disabilities',[15] which included his ill-health and the fact that he relied heavily for political support on Tun Razak.

As Prime Minister, he left his ministers on their own most of the time, so much so that one of them, the Minister for Home Affairs, grew very powerful and was feared even among his Cabinet colleagues because of his powers of arrest and detention. There were rumours in the foreign mass media that this Minister contemplated arresting some of his UMNO colleagues, including the Deputy Prime Minister, Dr Mahathir Mohamad who posed a threat to him within the UMNO party elections.[16] Tun Hussein Onn's attitude was not to interfere in such matters but to wait and see how events developed.

One of the crucial decisions which Tun Hussein did take was to select Dr Mahathir Mohamed as his Deputy Prime Minister in 1976, but when the time came for him to step down, he let his party UMNO pick his successor. The party chose Dr Mahathir as Prime Minister. It is said that when he assumed office, Dr Mahathir found 18 unopened red Cabinet boxes.[17] This showed how tired and slow Tun Hussein was in coping with his duties. Abdullah Ahmad, who was a Deputy Minister in his Government, describes Tun Hussein as follows:

> Hussein was very well-known for being gullible and the least clever of Malaysia's four Prime Ministers. He finds everything laborious and has a quick temper and an even quicker tongue.[18]

It was during Tun Hussein's tenure of office that the PAS–Barisan Nasional coalition broke up in November 1977 when emergency rule was introduced in the PAS-ruled Kelantan state. The cause of the crisis was the PAS dismissal of its Mentri Besar (Chief Minister), Datuk Mohd. Nasir, for flouting party discipline. Four days later, mass demonstrations in the state capital, Kota Baru, led to rioting. The Federal Government imposed a twenty-four hour curfew, proclaimed a State of Emergency in Kelantan, suspended the state assembly and placed all authority under a federally-

appointed Director of Government, who was responsible only to the Prime Minister, Tun Hussein Onn himself. PAS opposed the Emergency Bill. Its Federal Minister, two Deputy Ministers and two parliamentary secretaries promptly resigned. Much of the PAS–Barisan conflict could have been resolved through negotiations and personal contacts, but events were allowed to develop to the point when PAS felt that UMNO was undermining its control of Kelantan. Suspicions, recriminations and confrontations followed. PAS now rules Kelantan state again after recapturing it in the 1995 general elections.

Tun Hussein, however, received public endorsement for his administration in the 1978 general elections by winning 131 of 154 parliamentary seats with 57.6 of the total valid vote. PAS fared badly in the elections, losing the Kelantan state assembly and winning only five parliamentary seats from its previous 15 in 1974. The elections confirmed that the Barisan multi-racial concept received public support, and that the departure of PAS had not undermined the coalition concept. However, in 1981, Tun Hussein stepped down voluntarily on health grounds. Since he did not name his successor, UMNO selected his Deputy Prime Minister Dr Mahathir Mohamad as its president and this postion allowed the latter to become Prime Minister.

DR MAHATHIR MOHAMAD'S ADMINISTRATION (1981–PRESENT)

Not only was the election of Dr Mahathir as UMNO's president and Prime Minister done by the party, but the election of his Deputy Prime Minister was also decided by the party. In an intensely contested party election for UMNO Deputy President, Datuk Musa Hitam won and was duly named Deputy Prime Minister. Dr Mahathir's political career has had its ups and downs. He has been labelled by some political observers as a 'radical'. He was in the political wilderness for a while after being expelled as a Supreme Council member of UMNO in 1970 for criticising Prime Minister Tunku Abdul Rahman's policies, especially for accomodating the non-Malays, but was reinstated after Tun Razak became Prime Minister. His book, *The Malay Dilemma*, published in 1970, was immediately banned for its critical views of the Tunku's administration. The ban was rescinded only when he came to office. In 1974 after he was reinstated in UMNO Tun Razak appointed him Minister for Education. In 1976 Tun Hussein Onn appointed him Deputy Prime Minister and Minister of Trade and Industry. According to one of his biographers, his appointment as Deputy Prime Minister caused anxieties among the Chinese and Indian communities because 'Mahathir had long been an ardent 'Malay-firster', advocating measures to bring native Malays – *bumiputras*, or sons of the soil – into economic equality with the more

advanced ethnic groups'.[19] Dr Mahathir, however, denied that he was anti-Chinese or anti-Indian, but said he had merely spoken out in favour of 'Malays who should have a fair share in the country's wealth, no more than that'. However, as he stayed on as Prime Minister, Dr Mahathir's attitude towards the non-Malays changed. He tended to accomodate their demands and to recognize their rights, culture and roles in Malaysian society.

Dr Mahathir's early years of administration made an impressive impact on the public as he introduced reforms aimed at preventing official corruption and initiated new directions in overseas trade and foreign policy. The clean image was projected by the slogan *bersih, cekap dan amanah* (clean, efficient and trustworthy). Dr Mahathir also introduced a 'Look East Policy' which was preceded by a 'Buy British Last' policy to re-orient Malaysians towards Japanese and Korean models of economic and socio-cultural development following differences with the British Government over Malaysian attempts to buy up a Malaysian-based British company in London. In coping with the challenge of the emergent Islamic fundamentalist movement, his administration also attempted to incorporate formal Islamic principles and goals into government policies, such as the creation of an Islamic Bank.

One of the earliest crises which Dr Mahathir had to handle was the conflict with the Malay Rulers over a Constitutional (Amendment) Bill, approved by the Malaysian Parliament on 3 August 1983, to remove their veto powers over legislative bills. It was believed that while the King (*Yang DiPertuan Agong*) had agreed in principle to support the amendments, his fellow rulers were not happy as they feared they too would no longer be able to obstruct Bills at the state level.[20] The King was accountable to the Conference of Rulers. As the other rulers did not want the King to approve the Bill, he had to abide by their wishes otherwise they could remove him. Dr Mahathir first obtained support within his party UMNO and then launched a national campaign to win public support. During the campaign, the press published stories about the extravagant lifestyles of the rulers and their acts of public misconduct, such as unpaid bills, assault and rape.[21] UMNO held mass rallies at which Dr Mahathir explained that the rulers delayed key official appointments and Bills unnecessarily and interfered in state matters when they should be above politics. Dr Mahathir attacked the rulers for being ungrateful to UMNO, despite the party having saved their thrones for them during the anti-Malayan Union campaign. The Malay Rulers and Dr Mahathir finally agreed on a compromise. The King would be given sixty days to delay any piece of legislation compared to the previous fifteen days provided he gave reasons for delaying signing any piece of legislation, but once the piece of legislation was returned to Parliament, Parliament had the power to approve it a second time and then it would become law. This settlement was regarded as a major victory for Malaysian nationalism, as

it indicated the supremacy of popular sovereignty.[22] Dr Mahathir acted against the Malay rulers again in 1992 over an incident involving the Sultan of Johor's alleged assault of a hockey coach. He had the Malaysian Parliament approve another constitutional bill to remove the immunity of the Sultans for criminal offences, so that they would not be above the law. These actions have won Mahathir the respect and support of the people as a leader who would brook no nonsense from the Malay rulers.

At the time of writing, Dr Mahathir has entered his 16th year of office, making him Malaysia's longest serving Prime Minister. Inevitably, he has weathered several political storms, but has emerged stronger each time. The present Deputy Prime Minister, Datuk Seri Anwar Ibrahim, is the third to serve him after Datuk Musa Hitam and Encik Ghaffar Baba. During the years 1986–1988 he was challenged by Datuk Musa Hitam, and then by UMNO's former treasurer, Tengku Razaleigh. The first conflict led to Datuk Musa Hitam's resignation as Deputy Prime Minister, while the second led to a serious split within UMNO when Tengku Razaleigh and his faction broke away from UMNO to form a new party, called Semangat '46. Only after eight years did Tengku Razaleigh and his supporters return to the UMNO fold. During this period, the old UMNO was riven asunder, with the former Prime Ministers Tunku Abdul Rahman and Tun Hussein Onn throwing in their lot with Semangat '46. Prior to Tengku Razaleigh's departure, the UMNO had been dissolved by a High Court judgement, which had found that the 1987 party elections, in which Dr Mahathir had defeated Tengku Razaleigh, were illegal. The suit had been taken out by Tengku Razaleigh and his faction. In the battle for the old UMNO's name, assets and legacy, Dr Mahathir won as the Registrar of Societies ruled in favour of Dr Mahathir's application to establish UMNO Baru (New UMNO), while rejecting the application of Tengku Razaleigh and his faction to form a new party named UMNO Malaysia. Dr Mahathir also had the full support of the multi-racial Barisan Nasional component parties, who endorsed his position as Prime Minister. Nevertheless, at one stage he was a leader without a party.

Dr Mahathir's crackdown against a broad spectrum of dissent on 27 October 1987 aroused unprecedented protests and adverse international publicity. Observers recalled that before that date public discussion of education, language and religion, environmental pollution and the role of the judiciary was one of the freest ever seen in the country. The liberal atmosphere augured well for Malaysian democracy as it allowed some of the strongest criticisms of government policies, but Dr Mahathir's government interpreted the atmosphere differently arguing that these issues had generated inter-ethnic tensions.[23] On the belief that these tensions would lead to an outbreak of inter-racial conflict and violence, on 27 October 1987 the police arrested and detained over 100 individuals under the Internal Security Act. The government closed down three newspapers for allegedly publishing sensitive issues which could arouse

inter-racial antagonisms. The orders made by Dr Mahathir, who was also Minister for Home Affairs, led to strong criticism within Malaysia and he was also criticised by human rights groups all over the world. One of the criticisms was that although the ISA was meant only to curb communist or communal activity, it had been used against politicians and dissidents. Dr Mahathir's argument was that it could be used against any activity which threatened the national interests. Although over time the detainees were released, the liberal atmosphere which had existed prior to the ISA actions has not fully returned.

Of all his achievements Dr Mahathir has probably brought about the greatest transformation in the Malaysian economy, which he managed to turn around from the period of the depression in 1985–7 to new heights of prosperity. This enabled him to survive criticisms and opposition from inside and outside the country. The 'Look East Policy' which he introduced in late 1981 led eventually to a joint Malaysian-Japanese venture to produce the first national car, the Proton Saga. By 1985 the first popular models in the region of the 1300 to 1600 cc. had come out. To protect the local automative industry, high import tariffs were imposed. But, fortunately, the performance of the early Proton cars satisfied the Malaysian public. Since then, several models of Proton cars have appeared and have been exported to Britain, Singapore and other countries. In 1990 Proton made a profit of RM 25.9 million. Since its inception, however, it had made a total profit of RM 182.4 million. The 'Look East Policy' did not focus attention only on Japan, but also on South Korea and Taiwan. Many construction projects were awarded to firms from these countries in the hope that they would provide staff training for locals and facilitate the transfer of technology to Malaysia. The Government also tried to inculcate the values of thrift, hard work and high productivity from these countries in Malaysian workers, but these efforts have not been successful as critics have found that the conditions in Malaysia are not identical to those countries.

Dr Mahathir's Privatisation Policy was equally successful. This latter policy saw the privatisation of the automotive car industry, the national highway projects, part of the TV media, the posts, telecommunications and electricity services and the national airline and their takeover by several large *bumiputra*-controlled corporations. The privatisation policy enabled the New Economic Policy to propel forward, so that the denationalisation of state industries benefited many Malays, who became billionaires and millionaires overnight.

Internationally, Dr Mahathir has taken on the stance of a Third World critic of the Western world. His attitude has been extremely confrontational. At every world forum where he has been invited to speak, he has launched attacks on Western policies, especially those of the United States, Europe, Britain and Australia. His confrontation with Mrs Margaret Thatcher when she was Prime Minister of Britain led to

Malaysia adopting a punitive policy of 'Buy British Last'. The world remembered his outspokenness as Deputy Prime Minister in 1981 when to stem the tide of Vietnamese refugees flooding into Malaysia, he had reportedly said: 'If the illegal Vietnamese refugees continue to come in, we will shoot them on sight'. Nothing that was said later to explain this statement as a misquotation, such as 'shoo' for 'shoot', changed people's opinion of his toughness and determination. He is also known internationally for his uncompromising stand on the issue of drug trafficking. In Malaysia possession of drugs can lead to a mandatory death sentence. Consequently, several such cases resulting in death sentences on Australians, Britons and other Europeans, have led to international appeals and protests, all to no avail.

Dr Mahathir is the only Prime Minister to have outlined a plan for Malaysia into the 21st century. He has called it his Vision 2020, a plan to modernise Malaysia into the global economy. For Malaysia's multi-racial society, he has offered a Vision 2020 of 'full and fair partnership' which will be made up of 'one *Bangsa Malaysia* or Malaysian race'.[24] The multi-racial society may then hopefully become one Malaysian nation, a scenario which has been well outlined by Malaysian political scientist Khoo Boo Teik:

> The complete rehabilitation of the Malays can now be seen in their rise as a [capitalist] class able to claim parity with the non-Malays and the rest of the world. From the point of view of Mahathir and his *Melayu Baru* [New Malay], the 'prehistory' of the Malays has ended. Their history, and, by extension, the history of *Bangsa Malaysia* may perhaps begin.[25]

CONCLUSION

From this survey it is clear that British colonial rule laid the foundations for Malaysia's present multi-racial society and constitutional government. Since independence, however, political leadership has played a pivotal role in Malaysia's political stability and economic prosperity. Given the dominant position of the Malays, the Prime Minister's role is especially crucial. He must be someone acceptable to all the races in the country. Above all he must be a Malay who will safeguard the privileges of the Malays, while at the same time looking after and advancing the interests of the non-Malay minorities. The existence of constitutional government ensures that there is law and order in Malaysia today and that the Malay Rulers are now truly constitutional monarchs. Malaysia practises parliamentary democracy, as evidenced by the holding of general elections every five years. This gives the multi-racial society the right to choose

the government it wants. However, in the light of Malaysia's lop-sided society, the issue of how long it remains lop-sided and unequal remains to be resolved? Given the political powers entrenched in favour of the Malays in the Malaysian Constitution and the fact that the Malaysian armed forces and police are largely Malay-dominated, the Malays have the cards stacked in their favour. But political stability and economic prosperity cannot come from the Malays alone, they need also to rely on the assistance and support of the non-Malay minorities.

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7 Economy and Society

The Formation of a National Economy

Amarjit Kaur
University of New England

In the mid 1990s, Malaysia was well on the way to approaching Newly-Industrialised Country (NIC) status. In 1990, for example, nearly 27 per cent of GDP came from manufacturing industry. Nothwithstanding this, it is evident though that the level of industrialisation varies between East and Peninsular Malaysia, with the process being much more advanced in the latter. Moreover, the emergence of an integrated national economy was a slow process, arising from differing geographical locations, resource endowments and the cultural and ethnic backgrounds. The key to understanding uneven economic development in the Malaysian federation lies also in its historical and recent past and it is the aim of this chapter to examine and compare the pace of economic and social change in Peninsular and East Malaysia, taking a long-term view of their economic growth. The chapter concentrates on economic development prior to the Second World War, but also links the pre- and post- World War II periods. The chapter is structured in three parts. The first and major part focusses on economic and social change from about 1850 to 1940. It is argued that the foundations of an export-oriented economy and plural society were laid during this period. The second part analyses economic change from about 1946 to 1963 when colonial policies in Sabah and Sarawak brought these states closer to Malaya so that by the time of federation in 1963, the foundations of an integrated Malaysian economy had emerged. The third part deals with the post-1963 period when the state's identification of economic progress and development with industrialisation resulted in the centralisation of economic activity on the one hand and divergence in development on the other.

FOUNDATIONS OF AN EXPORT ECONOMY, 1850–1940

Within the Southeast Asian maritime world of the first half of the nineteenth century, the economies of Malaya, Sabah and Sarawak were largely 'external economies' whose production patterns were geared to meeting subsistence needs and trading within a mercantilist framework. The subsistence production of rice was the most important activity while

luxury products comprising decorative products (*bezoar* stones, hornbill beaks); aromatic products (camphor) and gastronomic products (birds' nests) were the staple of the long distance trade in forest products centred on Singapore. European colonial activity in the region after the mid-1850s resulted in the marking out of spheres of influence, delineated by precise boundaries, and the imposition of direct colonial rule. Thus Malaya came under British rule, Sabah under the British North Borneo Chartered Company rule, and Sarawak under the control of the Brookes. This process was accompanied by major changes and the transformation of the economies of the three territories into 'peripheral economies' whose production patterns were structured by the demands of the international commodity market.[1] The three territories shared many similarities in their administrative systems and the nature of economic management, and the late nineteenth and early twentieth centuries saw them acquiring many of the basic characteristics of the present economy: commercialised mineral and agricultural production, a wage labour force, an institutionalised bureaucracy, an infrastructure, and governments oriented towards the promotion of material progress. In this formation of an export economy, the main elements – capital, entrepreneurship, and wage labour – had an external origin and were concentrated in enclaves. Nevertheless by the second decade of the twentieth century, especially with the introduction of rubber, the indigenous people came to play a part in the productive systems of the territories.

Early Patterns of Settlement and Production

In Malaya, pre-colonial Malay society was organised around agricultural production. The Malays practised two main types of cultivation – swidden and sedentary. Swidden cultivation (*huma* or *ladang*) involved periodic forest clearing for one or more seasons of cultivation after which the land was abandoned to revert to forest. Sedentary agriculture (*sawah* or *bendang*) primarily involved wet-rice cultivation and the production of other food crops on adjacent land. Only permanently settled communities were therefore to be found cultivating *sawah* and were located on the riverine lowlands and the coastal areas of the Malay peninsula. The larger and better endowed deltas of Kedah and Kelantan had a long history of permanent peasant settlement based on *sawah* cultivation and were more thickly populated than the other river valleys in the country.[2]

The Malay economy was primarily a subsistence economy. It consisted of small groups of peasants who lived in small settlements and carried out agricultural, hunting and fishing activities. The needs of the peasants were simple and concerned mainly with the satisfaction of their basic requirements. Surpluses were rare, and when available, were usually bartered within the settlement. The basic organisational unit of production

was the family, although regular and periodic co-operative activities were often organised on a larger, sometimes settlement basis, for specific purposes. Land clearance and infrastructural construction, for example, tended to be communally organised, often in the form of corvée labour (*kerah*) demanded by the ruling class. Village and settlement ties, often overlapping with kinship relationships, were thus strengthened by the community's organisation and shared responsibility for various productive and other activities.[3]

The waterways – both riverine and maritime – served as the primary means of inter-settlement communication and transport in pre-colonial times, being supplemented by various land routes through the dense equatorial forest. It is therefore not surprising that the territorial boundaries of several Malay *negeri* (country and now referred to as state) tended to correspond geographically with those of river basins. Ease of travel and communication provided by the course of a river and its tributaries facilitated the assertion of political control, backed by military power. Therefore, the ruler of the Malay state, holding the title of sultan, usually choose to locate himself and his followers strategically in relation to his territory. This was usually at the river mouth or at an important confluence. Subject to the sultan, at least nominally, were the different levels of territorial chiefs. The formal political hierarchies varied in the different Malay states. In the *negeri* where the state provided some economic infrastructure in the form of an irrigation system and thus had more control over a permanently settled population, power tended to be more effectively centralised, usually in the person of the sultan.[4] In the riverine *negeri* the ruling class typically obtained revenue by taxing riverine commerce. This usually involved the scattered location of chiefs at strategic points on a river's course and thus ensured the decentralisation of the state in such *negeri*. The titular head of state was in these circumstances less in a position to exercise effective authority.

As noted earlier, district or territorial chiefs held under commission from the ruler, rights of control over a specified area and were entitled to draw revenue from the area they administered. In the mid-nineteenth century, their main source of revenue was from tin. After the establishment of British control in the Straits Settlements and settled trading conditions there, Straits Settlements merchants and financiers increasingly turned their attention to the Malay states as a field of investment. Simultaneously, the rulers and chiefs in the Malay states looked to these merchants and financiers as a source of both capital and manpower.

Initially, the merchants and financiers made loans to Malay chiefs who then used the money to make advances to Chinese miners and provide them with daily necessities and opium. As payment, they obtained tin which they exported in turn. Until the 1850s, however, the Malay ruling class forbade the direct export of tin.[5] Subsequently, the miners were

allowed to export the tin they produced as a result of new arrangements concluded between the Straits merchants and the Malay rulers and chiefs. The Straits merchants made advances directly to the Chinese miners and mine managers in the Malay states while the Malay chiefs tapped the resulting production by drawing tribute and certain taxes. The expansion of mining thereafter led to major changes in this sector.

The history of settlement in Sabah and Sarawak can best be understood within the framework of the physical environment of the region. A common Borneo cliche is that 'water unites but land divides' and helps explain a physical environment characterised by a mountainous forested interior, inland rivers and a long shallow swampy coastline. There are three broad ecological zones – the coastal and estuarine belt, the inland rivers and the interior. The first zone, the coastal and estuarine belt, was historically the most important in terms of settlement and economy, a pattern which still persists today. The premier cities, Kuching, Kota Kinabalu and Sandakan, are all coastal settlements, their past shaped by both indigenous and colonial imprints. They are also estuarine and from earliest times provided scope for settlement, farming and trading opportunities afforded by their location between the interior and the coast. The second ecological zone developed as settlement, trade and economic development traditionally found their way inland along the river valleys. For many groups, riverine localities were the favoured settlement sites, taking advantage of the fishing and trading opportunities the waters provided and the commercial possibilities of the surrounding forest. Patterns of longhouse settlement were also strongly influenced by the river networks. Further inland were the true upland zones. As noted by Harrisson, the upper navigable limit for rivers constituted a crucial cultural divide between lowland and upland cultures. These comparatively isolated areas resulted in different ways of life, exemplified by nomadic tribes living in a hunter-gatherer economy.[6] In the broad economic zones, settlements were scattered, though river transport played an important role in deciding location.

Drainage basins were the most important territorial units in both territories. They defined and demarcated tribal areas, determined spheres of political and social influence and channelled patterns of population migration and trade. Indeed, the inhabitants identified themselves as people of a certain river and when the Chartered Company and the Brookes obtained concessions, these concessions were cessions of rivers or river systems. The steady encroachment on the river systems of Brunei effectively reduced Brunei's influence and power on the island.

The indigenous economic systems were broadly similar in both territories. In Sarawak the inhabitants adapted their economies and societies to meet a variety of different conditions. Along the swampy coasts, societies like the Melanau developed a way of life based mainly on fishing and the collection of swamp sago. In the interior the dominant

form of land use was swidden agriculture, originally of root crops supplemented by forest sago and later the adoption of hill padi. The steep upland forests with their poor soils made permanent cultivation unsustainable and the inhabitants developed a way of life based on shifting agriculture complemented by hunting and gathering. In areas where the soil and the aspect provided better conditions of permanent agriculture, wet rice cultivation on well constructed fields also developed. The Malays, who were later arrivals, settled on the coastal areas and took over parts of the immediate hinterland to develop wet rice cultivation along the banks of the lower reaches of some of the major rivers. Yet in other areas, people like the Penan eschewed agriculture altogether, adopting instead a mobile existence based exclusively on hunting and gathering. For the most part, these groups were independent and self-sufficient. However, they were neither isolated from one another, nor from the outside world and shared common language attributes. Trade, war, and occasional intermarriage linked the various tribes throughout the territory and head hunting was common.

In Sabah, the three zones were identified with firstly, the gathering of sea produce from the shoals and reefs offshore the coastal regions; secondly with the cultivation of wet rice on the western lowlands ; and thirdly, with the swidden cultivation (dry/hill padi, corn, and root crops) of the interior highlands. The general pattern of the three zones, the coastal and estuarine belt; the river valley; and the interior; not only underpinned the human ecology of Sabah and Sarawak but also formed the dividing line between the different groups, based on habitat, language and belief system.

Most of the observations of the indigenous economic systems comes from the accounts of western observers in the late nineteenth and early twentieth centuries and it is therefore difficult to determine how such practices developed historically. It is possible that wet rice cultivation in both territories was stimulated by the existence of a market among Malay traders and coastal gatherers of sea produce.

There is scant evidence on practices relating to landholding. A high proportion of the people of the interior followed a shifting lifestyle. Consequently, the earliest form of tenure seems to have been based on usufructure established by clearing and cultivating vacant land. However, many tribes had a mobile existence and the typical pattern appears to have been a build-up of population in a particular area and then an exodus to find new land. (The practice of shifting cultivation is discussed in greater detail in the section on agriculture.) Nonetheless, where indigenous management of natural resources and land usage is concerned, it is clear their traditional systems were sustainable only under some very rigid conditions and the most important of these conditions was a sufficiently low person-land ratio.[7]

Development of an Export Economy

Mineral Resource Utilisation

All three territories possessed two common attractions – mineral resources and land – and the unchallenged power of the new rulers facilitated the development of these resources. In Malaya and Sarawak, mineral resources accounted for a major proportion of the total export earnings during this period, while in Sabah mining played a relatively small role in state revenues. The relative importance of the main minerals – tin, gold, coal, antimony, mercury and petroleum varied from territory to territory and each of these minerals 'reigned' at different times (See Chapter 2).

Although tin had been mined for centuries, Malaya's tin development expanded only after about the 1850s when important discoveries were made in the Larut area of Perak. These discoveries were followed by others in Selangor and later in the Kinta Valley of Perak. Most of these deposits were developed rapidly only in the 1880s when adequate roads and short railway lines were built by the British to open up the interior. In all these developments, Chinese migrants were almost completely dominant. Their organisation of mining and techniques were superior to that of the Malays, and cheaper than the capital intensive methods of the Europeans.

Chinese mining organisation was essentially a *kongsi* enterprise. The *kongsi* was a business cooperative or 'an association of miners who carried on what was in fact a commercial working of the mines under their own elected leaders'. The isolation of the tin mines from settlement areas or farms meant that the *kongsi* had to provide a multiplicity of ancillary services needed by the migrants (and their dependents). It also provided 'an institutional framework into which new arrivals could fit' and 'allowed mining to continue unhampered by the fluidity of the Chinese population'.[8] The *kongsi* additionally offered a sense of security and identity because it relied on a variety of networks – kinship links, clan ties and provincial connections – to integrate the Chinese miners into the broader Chinese society. The Chinese also introduced significant new innovations and mining technology such as the chain pump, hydraulic sluicing and the gravel pump, adapting mining methods used in Australia to the Malayan situation. With their superior technology, ready access to labour and their system of organisation, the Chinese dominated the tin mining industry until around the second decade of the twentieth century. Malayan tin production expanded rapidly and while in 1874, Malaya had accounted for about 10 per cent of world production, by 1895 the figure was around 55 per cent (and still 40 per cent in 1914).[9] Malaya emerged as the world's largest supplier of tin. The spur to increased tin output was demand which came from the industrial countries of Europe and America, most of the tin being required for tin plate used in food canning, and the manufacture of barrels for petroleum. Prices of tin did not in fact rise

much over the period 1870–90, although there were peak years which encouraged investment (prices were £62 per ton in 1878 and £118 per ton in 1888). The relative price stability was due to the tapping of very low-cost sources of tin deposits. Given Chinese mining techniques it made sense to look for new easily – won sources of ore rather than mine existing sources more intensively.

British government policy aided tin development through the provision of infrastructure and the availability of land surveys containing information on tin resources, but the development of tin mining was essentially undertaken by private enterprise. Private enterprise was also encouraged by various fiscal measures and by the establishment of law and order. By the turn of the century, western companies were able to establish a foothold in the industry because the practical effects of mining legislation tended to favour western methods of operation. Other administrative regulations such as British land policy; government action against Chinese revenue farming; control of opium and secret societies, all of which had contributed to Chinese dominance through their effects on control of the mining labour force and on Chinese capital accumulation, successfully enabled British capital to dominate the tin industry after 1912.[10]

As western capital-intensive methods (dredging, or, in the case of Pahang, lode mining) became more significant, the Chinese share of Malayan tin output fell from 75 per cent in 1913 to about 30 per cent in 1937. Western enterprise also dominated tin smelting, though Chinese capital was also involved in the Straits Trading Company which carried out the smelting in Singapore.[11] Although tin production did not substantially change during the period 1895–1938, the value of tin exported rose as shown in Table 7.1 below.

Table 7.1 Malaya: Average value of tin output, 1898–1937 (£)

Years	Value
1898–1903	5 208 729
1904–1908	7 319 155
1909–1913	8 346 994
1914–1918	8 766 317
1919–1923	8 042 074
1924–1928	13 451 368
1929–1933	7 601 124
1934–1937	11 953 424

Source: Li Dun Jen, *British Malaya An Economic Analysis*, second (revised) edition (Kuala Lumpur: INSAN, 1982) p. 67.

During the First World War tin prices rose rapidly, but prosperity in these years gave way to difficulties in the inter-war years. Tin output in Malaya grew 11 per cent in the 1920s and stagnated in the 1930s. During this period Malayan output was around 33 per cent of world production whereas it had been over 50 per cent in the 1890s.

A feature of the period were the international attempts to regulate output, and hence keep up prices – Bandung Conference between Malaya and the Netherlands East Indies, 1921 and much more important, the International Tin Control Scheme in 1931, which was renewed in 1934 and 1937. Two features of the 1930s (the depression period) were the growth of western enterprise at the expense of Chinese enterprise and the increasing control of Malayan tin by large London-based companies. World tin production is shown in Table 7.2.

Malaya's share between 1913 and 1937 remained fairly constant (except in 1922), and Malaya was still the world's largest producer in 1940.

Tin's pre-eminence led to the overshadowing of other minerals in Malaya, which included gold, coal, manganese and iron ore. Of these, only gold and coal were of any great significance. Between 1915 and 1960 (when coal mining operations ceased at Batu Arang) over 14 million tons of coal were produced.[12] The coal was essentially for domestic consumption – most of it was used by the railways, the power stations and the tin mines.

In conjunction with trends in investment activity based on cost advantage, the evolution of a pattern of economic specialisation in the western half of the Malay peninsula continued, while the eastern Malayan states experienced substantially less capital investment. Moreover, with the increased capitalisation of the mining sector, Malay rulers and territorial chiefs were completely dislodged from their controlling position and were no longer able to participate in the economic development of their states. Politically, their authority and power had been effectively undermined as they became absorbed into the western-type bureaucratic system.

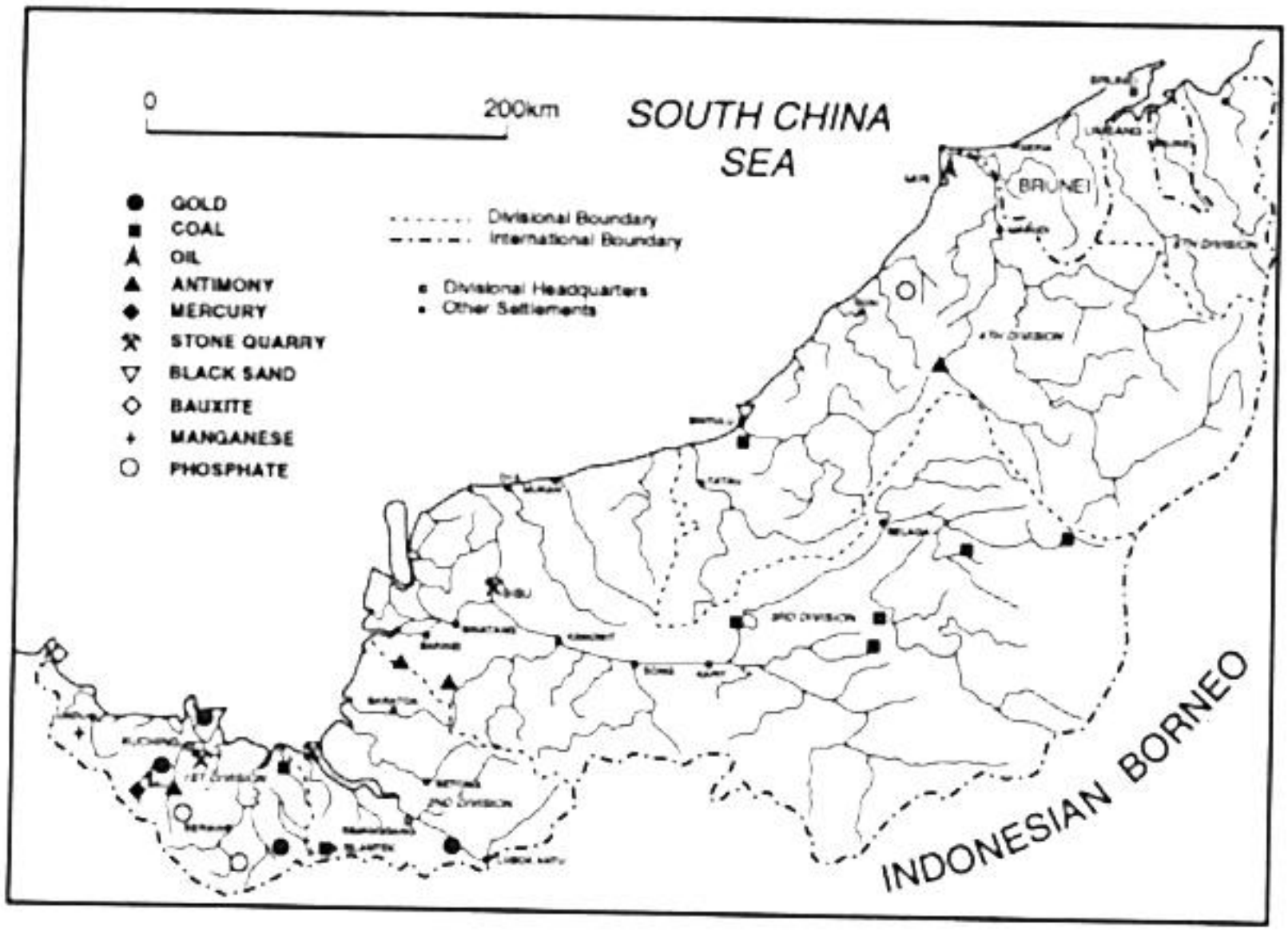
In Sarawak five minerals predominated – gold, mercury, antimony, coal and petroleum and each of these 'reigned' at different times. (See Map 7.1 on the distribution of mineral resources in Sarawak). Until the mid 1880s, antimony was the leading mineral product though mercury had a short-lived boom in the 1870s. Coal then became important in the last two decades of the nineteenth century. Gold, which had been mined since the early nineteenth century at least, became the most important mineral export at the turn of the century. It was supplanted by petroleum in the third decade of twentieth century.

Table 7.2 World tin production in 1913, 1922, 1929, and 1937*

	1913		1922		1929		1937	
Producing Countries	Tons	%	Tons	%	Tons	%	Tons	%
Malaya	51 377	38.4	37 226	30.4	69 366	36.1	77 542	37.3
Nigeria	3 872	2.9	5 123	4.1	10 734	5.6	10 468	5.0
Bolivia	25 939	19.4	27 685	22.6	46 338	24.1	25 024	12.0
Netherlands East Indies	20 921	15.6	29 532	24.1	35 920	18.6	39 825	19.1
Siam	6 748	5.0	6 979	5.7	9 939	5.2	16 494	7.9
Others	24 943	18.7	16 055	13.1	20 303	10.4	38 847	18.7
Total	133 800	100.0	122 600	100.0	192 600	100.0	208 200	100.0

* These production figures differ slightly from those given in later statistical yearbooks prepared by the International Tin Study Group.

Source: International Tin Research and Development Council, *Statistical Year Book, 1939*, cited in Yip Yat Hoong, *The Development of the Tin Mining Industry of Malaya* (Kuala Lumpur: University of Malaya Press, 1969) p. 276



Map 7.1 Sarawak: Mineral resources

From the outset, James Brooke adopted a policy of monopolisation of the state's mineral resources. He reserved for himself a monopoly in the trade of antimony ore, kept western interests out of Bintulu and obtained for himself exclusive rights to mine coal along the whole of the northwest coast of Borneo.[13] His main rivals were Chinese miners who had been mining gold since the early nineteenth century near Pangkalan Tebang in Sarawak just north of the Indonesian border. They later moved to Bau and pioneered gold and antimony production there.

Initially, Brooke was reluctant to disturb the Chinese miners who had established mining settlements complete with market gardens and shops and built a network of roads in the area. The *kongsi* had work and profit-sharing arrangements well-suited for mining activity on a small scale, enjoyed political autonomy and conducted trade with Sambas in Kalimantan rather than with Kuching, the capital of Sarawak. This autonomous existence was ultimately challenged by James Brooke. Since opium was a government monopoly James levied a 'tax' on the opium bought for consumption by the *kongsi*. This was in the form of an annual payment of 60 *tahil* of gold on the miners based on a given population size. When the quantity of opium recorded as consumed failed to keep up with the expanding population, James concluded the Chinese were engaged in opium smuggling. He raised the 'tax', which was opposed by the Chinese and this led to the Chinese uprising of 1857.[14] This uprising

is significant for several reasons. Firstly, it led to the collapse of the Chinese mining industry in Sarawak; secondly it resulted in strengthening Brooke's position; and finally it led to the taking over of mineral exploitation in the state by a western concern – the Borneo Company. Although initially wary of 'big capital', James Brooke gave mining and trading concessions to the Borneo Company, which was characterised by a scale and mode of operations that seldom brought it into conflict with his own ideas. He believed that the successful exploitation of Sarawak's mineral resources required heavy initial capital outlays and expertise which could only be provided by western capital and entrepreneurship having connections with London.

After the insurrection, the Bau mining area came directly under the political control of Kuching and the Borneo Company extended its operations to gold mining.[15] Subsequently, the leaders of the reconstituted *kongsi*, who had trickled back to Bau, established a working relationship with the Rajah and the Borneo Company (by 1884 the Borneo Company had bought out the largest and last of the Chinese syndicates). With its superior technology and capital, and by virtue of its special relationship with the Brookes, the Borneo Company took over gold mining in Sarawak. Between 1899 to 1921 inclusive, the gold output from the Bau and later, Bidi mines totalled 983 255 Troy ounces. It was valued at $25 995 222 and yielded a royalty of $1 466 462. Incidentally this output represented 81 per cent of the recorded gold production of Sarawak from 1865 to 1954 and was obtained during a period of twenty-two years.[16] The Borneo Company only surrendered its monopoly rights over minerals in Sarawak in 1921 when most of the minerals were worked out and it was no longer profitable to work the mines.[17]

Antimony and cinnabar were the Borneo Company's two important mineral monopolies. Most of the antimony in Sarawak was located in the same mineralised belt of country that included the gold workings at Jambusan and Buso while cinnabar (mercury sulphide) was worked at Tegora, Gading and Gambang. The antimony was largely worked out by the early twentieth century while cinnabar/quicksilver was abandoned at the end of the nineteenth century. Between 1870 to 1916, the antimony exports were valued at $1 905 031, while between 1870 and 1899, the Borneo Company exported quicksilver with a total aggregate value of $1 159 966.[18] Sarawak also became the leading exporter of antimony and quicksilver to the European market during the period under discussion.

As shown in Table 7.3, the percentage value of these mineral exports to the total exports of Sarawak produce between 1878 to 1908 varied from 9 to 21 per cent.

Certainly, where the three main minerals were concerned, private enterprise, government policy and natural resource endowment dovetailed neatly with the stimuli from the international economy. As the Brookes' position became politically more secure, western capital in the form of

Table 7.3 Sarawak: Mineral production, 1868–1948 (Straits $)

Year	Exported Production	Mineral Exports	Ratio of Mineral Export to Export Production, %	Mineral Royalties Paid to the Sarawak Government	Minerals by Descending Order of Export Values
1868	N.A.	38 001	—	N.A.	Antimony, Quicksilver, Gold, Diamonds
1878	809 325	83 086	10.0	13 333	Antimony, Quicksilver, Gold, Diamonds
1888	1 322 325	118 915	9.0	8 889	Antimony, Coal, Quicksilver, Gold
1898	3 089 017	323 230	10.0	10 177	Coal, Antimony, Gold, Quicksilver
1908	5 732 723	1 177 255	21.0	77 367	Gold, Coal Antimony, Quicksilver
1918	9 211 459	N.A.	—	98 109	Gold, Oil, Coal
1928	53 302 340	39 302 340	74.0	770 835	Oil
1938	23 244 666	12 482 134	54.0	387 636	Oil, Gold, Silver
1948	166 023 615	111 820 069	67.0	67 320*	Oil, Gold, Antimony

* Estimated oil royalty and mining rents and fees; most of oil exported in 1848 was produced in Brunei.

Source: *Handbook of the State of Sarawak, 1949*, p. 125

the Borneo Company moved in, monopolised the state's mineral resources, and internationalised this sector. These three minerals were followed by coal in the 1880s. Between 1874 and 1931 (when the last mine closed down), a total of 1 458 757 tons of coal were produced in Sarawak. While most of the coal produced was consumed locally, approximately one-fifth (302 899 tons) was sold in markets outside the country, mainly in Singapore, Manila and Hong Kong.[19]

In the second decade of the twentieth century, Sarawak's mineral production underwent further expansion with the discovery of petroleum. The earliest reference to oil in Sarawak is in an 1882 report by the Resident of Baram district. Subsequently Charles Hose, a Brooke official, investigated occurrences of oil both in Miri and other areas of the Baram district. In 1907 he obtained Charles Brooke's permission to enter into negotiations with the Anglo-Saxon Petroleum Company (one of the Royal Dutch/Shell group of Companies) which was awarded a concession to explore for petroleum and other mineral products in the area for the term of seventy-five years.[20] In 1921, Sarawak Oilfields Limited was incorporated in Kuching to take over the oil interest previously administered by the Anglo-Saxon Petroleum Company Limited.[21]

The petroleum industry was a prime example of an enclave activity with virtually no linkages to the domestic economy centred on Kuching. The first shipment of oil from Miri was about 500 tons in 1913 and by the second decade of the twentieth century, oil had become the second most important mineral export in term of value. It then moved to first place (see Table 7.3).

The mining sector played a relatively small role in Sabah's economy. The Chartered Company had assumed that the territory was awash with gold and diamonds and hired trained mineralogists to investigate the mineral possibilities of the state. Only three minerals – gold, coal and manganese – proved to be of some commercial value but their relative importance in the economy was insignificant.

In the organisation of mining, there was virtually no difference between Sarawak, a 'private colony' and Sabah, a chartered company territory. Both administrations monopolised mineral resources but while the Brooke administration transferred these rights to its chief financial backer, the Borneo Company, the Chartered Company went into mineral resource exploitation itself in partnership with other western interests. With the exception of oil, there were no dramatic developments, although the Borneo Company did bring in new techniques of gold extraction. In coal, there was little or hardly any mechanisation in either territory; transport lines built to serve the mines were short and had specific functions; and the coal was mainly exported. Unlike Sarawak, where the petroleum industry had resulted in a marked expansion in state revenues in terms of quantity and value, Sabah had to wait for the expansion of its rubber industry and land-based production to provide this change.

Agricultural Development

All three economies were basically agricultural although only a small percentage of land was devoted to settled cultivation in Sabah and Sarawak compared to Malaya. It is in this sector that both quantitative and qualitative changes took place, particularly with the advent of rubber. In terms of production, agricultural activities fell into two main types: peasant (subsistence) farming based on padi (both wet and dry) and other food crops for local consumption, and cash crop production (chiefly sago, rubber, pepper, and tobacco). Change was varied with the most dramatic occurring in the cash crop sector. Rubber especially was able to attract substantial participation by both foreign and indigenous, capitalistic and non-capitalistic, producers. From the smallest holdings upwards, inputs of capital, hired labour (initially share-croppers but increasingly wage labourers further up the scale) increased steadily, accompanied by shifts in the methods of finance, management and production towards the plantation type. The structure and development of plantation farming and its effects on indigenous societies and their farming systems was remarkably similar in all territories, influencing labour supply, population migration and the nature of property rights. Since the issue of land was of crucial consideration in the agricultural sector it is pertinent here to provide an outline of land tenure systems and land legislation before focussing on agricultural production.

Patterns of Land Tenure and Land Legislation

The earliest form of tenure in Malaya seems to have been based on usufructure established by clearing and cultivating unused land. Thus in areas where shifting cultivation was the general practice the peasant cultivator's right to the land being worked on was recognised by the community. When the cultivator abandoned the land, his right to it lapsed. There was also a distinction between unused (*tanah mati*) land, whether primary or cultivated previously and then abandoned; and land under active cultivation (*tanah hidup*). Proprietary rights vested only in the latter, and could be transferred to heirs without limitations of time. There is evidence of land dealings in permanently settled areas where sedentary agriculture was the practice. Overall, the customary arrangements were subject to the absolute right of the ruler to grant control over an area of land to a member of the aristocracy.[23]

Although the traditional systems of land tenure among the peoples of Sabah and Sarawak varied considerably, they shared many characteristics which could be perceived as variations on a common theme. Historically, though sovereign rights to land had rested ultimately with the Sultan of Brunei, among the indigenous people land was held communally and a community's communal land extended far beyond the areas actually used

for swidden agriculture. This extensive tract of land included areas of swamp and primary forest for hunting, the collecting of forest produce and reserves for future swidden sites. Typically, the community's land was demarcated by natural features such as ridges and streams. Within these communally-held tracts individual families of longhouse communities established usufructuary rights to the land they cleared for gardens. Individuals retained rights to these plots not only for the period of cultivation but also during the subsequent fallow. These rights were also inheritable since the individual plots were only created with the consent of the whole community; individuals forfeited their usufructuary rights to farming land if they left the community. Thus, despite movement of families and individuals, the communally-held territory retained its coherence in indigenous society.[24]

In all three territories control of land became a key concern for purely commercial motives. All three administrations brought a new approach to the ownership and usage of land. Ultimate control was vested in the state and legal systems of tenure developed which granted prescribed rights. The creation of a market in land was thus accompanied by the precise delineation of boundaries by cadastral survey, the imposition of annual cash rentals and the prescription of various categories of use, for example, agricultural, mining and commercial land. In Malaya the British began the process of change in the Straits Settlements. The expansion of commercial, agricultural and mining activities in the Malay states subsequently led to the introduction of the Torrens System of land registration adopted from South Australia. By this land legislation, the state allowed grants or leases of land on large blocks (over 100 acres) accurately surveyed, with a document of title issued after payment of all fees; a premium according to the class of land; and an annual quit rent. For smaller blocks of land or smallholdings (under 100 acres), there was only a rough demarcation of area with the owner receiving as evidence an Extract from the Mukim Register (EMR) and paying an annual rental. Land in such categories was open to all ethnic groups, was heritable and chargeable as security for loans.[25]

In Sabah, the commodification of land was especially crucial to develop land-based production since the territory's mineral resources were limited. The first land laws were introduced in 1883 and formed the basis of the Land Code in the state. By this Land Code and all subsequent legislation (based on the model adopted in the Federated Malay States and the Straits Settlements), all land in the territory was vested in the Chartered Company. The land legislation provided for the establishment of a new Land Register based on the Torrens System whereby ownership recorded in the Register constituted a guarantee of title. Moreover, the legislation provided for the definition and demarcation of native land since it was imperative that the indigenous population register its rights in land on an individual basis, and in return for title, pay an anual quit rent. If in

a three-year period the land was left uncultivated and no quit-rent paid, it reverted to the state.[26] Additionally, no land could be disposed of by any native group or individual without authorisation from the Company. In theory therefore, while the intentions of the administration were to 'protect' the indigenous people, in practice the legislation provided for the identification of land that could be alienated and sold to European and other planters.[27] Subsequently, in order to curb the practice of shifting cultivation which was perceived to be 'destroying' the forest and impacting on the timber industry, new legislation was introduced in the form of the Ladang Ordinance of 1913. This legislation had a dual purpose: to bring shifting cultivation under government control; and to accommodate the concerns of the Forestry department. (which was especially hostile to the practice). An annual rent (or tax) was imposed on shifting cultivation at the same unit area rate as that for permanent cultivation. The legislation was also aimed at encouraging permanent wet-rice cultivation and the speeding up of the process of land registration. The tax on shifting cultivation was to be policed by indigenous authorities working with the district officers.[28] In the same year, a new comprehensive set of land laws were issued which required the registration of native titles. Provision was made for communal titles and clauses protecting indigenous lands from alienation by foreigners were also included in the legislation.[29] Interestingly though, the tobacco plantations which were organised on a basis similar to shifting cultivation and followed a pattern of land clearance, then planting and subsequent abandonment, were not included in the category of shifting cultivation for the purposes of the Ladang Ordinance. Briefly therefore, the demarcation of lands and land registration was intended to ascertain what land was free of indigenous claim and available for sale to western planters and Chinese settlers. Thus where land was concerned, the Chartered Company through its land legislation specified property rights according to its own interests and consequently, altered the traditional concepts of land ownership and exploitation of forest lands.

In Sarawak apologists for the Brooke administration have taken pains to point out that the Brookes aimed to shield the natives from the full force of European capitalist expansion and did not encourage the large-scale cultivation of export crops. This is not borne out by history. Initially land-based production did not figure prominently in James Brooke's plans. Although he claimed sovereignty over all land, the indigenous people could claim ownership over land on the basis of usufruct and native customary law. The first major piece of legislation in the state was the Code of Laws which was introduced in 1842. By this legislation, there was to be no interference with native customary law and immigrant races were allowed to settle only on land not occupied by indigenous groups. Subsequently legislation was introduced to secure firm government control over native lands. The first legislation to control the

use of land was implemented in 1863, by which the Rajah asserted his personal ownership over the whole of his domain, reserved all mineral rights to the state and provided for road and river bank reserves. At the same time, the Brooke administration provided for the leasing of land to others and established property rights in land. Attempts to control internal migration and shifting cultivation were motivated by the need to maintain political control and also because it was believed (as in Sabah) that shifting cultivation was inefficient and led to deforestation. The Land Order of 1875 marked the first attempt at restricting shifting cultivation by the introduction of a fine on land cleared and subsequently abandoned.[30] In 1933 the land settlement order was introduced to provide for the gradual survey and registration to title of land following the Torrens system of land registration. The creation of a Land Register and the Land Settlement order meant that the Brooke state could now exercise compulsory acquisition of native customary lands by notification, and native Customary Rights could be extinguished.[31] As a consequence of this legislation, a distinction was introduced between native areas and mixed zones, with Chinese and other 'non-native farms' being restricted to the latter. Native rights to land, while recognised, were technically rights to the use or lease of state lands. This legislation substantially weakened the indigene's ability to resist land expropriation during the rubber boom and especially after World War II, when pressure on interior land intensified.

Commercial Crop Production

The spread of plantations associated with cash crop production was a major consequence of economic penetration accompanying western rule. It involved inserting new cash crops into predominantly subsistence agricultural economies. In common with the rest of Southeast Asia, this process took place at varying rates and intensity in Malaya, Sabah and Sarawak. Essentially, the plantation system involved the planting of a tree or related crop grown and cultivated either on estates or smallholdings, as opposed to growing naturally on native lands. The main crops grown in Malaya, Sabah and Sarawak were rubber, tobacco, coconut, pepper, gambier, coffee, sugar cane and later oil palm and cocoa. These crops made an important contribution to the export revenue of these territories though their significance varied across the territories. All three administrations actively encouraged cash crop production and established experimental gardens to experiment with a whole range of crops and assess their commercial significance. They also provided the political security for investors and helped them secure fertile lands and recruit immigrant labour. Plantation agriculture coincided with industrial expansion in Europe and the United States, the opening of the Suez canal and widening markets for agricultural and other commodities. In this section, only the main cash crops will be discussed.

In Malaya, the most successful commercial crop was rubber. Until the 1890s it had not been considered seriously. One reason for the lack of interest was the earlier growth of coffee plantations in the 1880s (largely stimulated by the failure of Ceylon's coffee crops due to disease). The profitability of coffee was short-lived, coffee prices collapsing after 1895. At the same time the government compelled Chinese tapioca plantation owners to plant secondary crops (coconuts or rubber) so that the plantations would be viable when the soil was exhausted from tapioca. Above all, though, world demand for rubber soared (Dunlop invented the pneumatic tyre in the 1880s, while after 1900 motor cars developed rapidly, and rubber was also used for electric insulation). As in the case of tin the role of the Straits ports (Singapore and Penang) was crucial in the development of rubber plantations. These ports provided banking, commercial, and shipping services, and also acted as distribution centres for migrant labour. In comparison to tin mines, most of the immigrant labour on the rubber estates was South Indian, especially Tamil, arriving through Penang.

Initially, the proprietary estate typified western rubber planting in Malaya. In the early twentieth century, this type of organisation gave way to the powerful merchant houses of Singapore which called upon the resources of the London capital market to finance expansion in the new industry. With their extensive trading connections these firms were well-equipped to forge links between the plantations in Malaya and investors in Britain. Frequently, a proprietary concern or a small plantation company enlisted the help of one of the merchant houses in floating a new company in London. The capital resources of the new company consisted partly of the proprietor's shares, partly of the investments of the merchant house itself, and partly of subscriptions from the public or London financial houses. Usually, the merchant house was appointed as managing agent and secretary of the new company. In some cases, the merchant house itself bought a number of estates before promoting a new company in London. Nevertheless, the agency houses did not monopolise rubber planting after 1900, nor was rubber cultivation confined solely to the Federated Malay States (FMS).

As an agricultural and not a mineral commodity, rubber was not limited to a few areas. It could be grown on soils of low fertility, such as laterised soils, and this meant that it could be cultivated almost anywhere on the peninsula with the exception of poorly-drained soils. Since so many of the more accessible regions in the western Malay states were already the scene of mining activity or had already been alienated for rubber, the desire was soon felt for freer scope in hitherto unoccupied adjacent territories. Though vast tracts of Pahang were undoubtedly intrinsically suitable for rubber planting, their remoteness rendered them less attractive than either western Johor or southern Kedah. Conversely, Johor's favourable location between Singapore and the FMS led to an

influx of development from these regions to the former. Similarly, Kedah's proximity to and close economic ties with Penang resulted in some trickle-down of development from Penang. In Kelantan, an independent group of estates controlled by the Duff Development Company went into rubber planting. Apart from the independent group of estates, rubber goods manufactures, such as Dunlop and the United States Rubber Company, also entered the field, investing mainly in the western Malay states.[32] Rubber output and export grew rapidly. There was an especially rapid boom in estate plantation during the 'rubber boom' of 1905–8, when rubber prices were very high (prices were 3 shillings a pound in 1897, over 6 shillings in 1906, and over 12 shillings in 1910). Much of the development was concentrated in the western states, in areas already well-provided with roads and railways as a result of earlier tin development. Thus, between 1906 and 1929, rubber acreage in Malaya increased from 129 809[33] to 2 971 000[34]; rubber exports rose from 6000 tons in 1910, as the trees came into production, to 456 000 tons in 1929.[35]

Concurrent with the boom in corporate investment, rubber was also taken up by smallholders. The smallholders were able to get access to land despite official constraints and family labour was readily available. In many ways rubber was eminently suitable for adoption by the Malays, requiring little effort to plant seedlings and little tending of the trees. Tapping techniques were easily acquired. Furthermore, the peasants could subsist on padi cultivation during periods of depressed prices. When prices were high, they thus benefited from an additional source of income. Although the result was a product of 'relatively inferior' quality compared to the estate product, it was readily disposable in international markets though a network of dealers and after further processing in centralised factories, all mainly Chinese-owned. The expansion in rubber cultivation in Malaya is shown in Table 7.4.

Speculation in land by the Malays and the fluctuations in rubber prices was a worry for the administration which feared the creation of a class of landless Malay wage labourers. Consequently, in 1913 the British introduced the Malay Land Reservation Enactment which empowered the separate states of the FMS to set aside areas reserved for use by Malays, particularly for rice cultivation, and to prevent them from selling existing holdings to rubber estates. Briefly, the Enactment designated most existing sites of Malay settlement as areas where non-Malays could not hold land. In many reservations the planting and maintenance of specified numbers of coconut and fruit trees per hectare was stipulated and rubber cultivation was often not allowed without payment of a higher land rent, or was completely forbidden. In effect, this Enactment and the Rice Lands Enactment of 1917 restricted the bulk of the Malay population to the rural areas and subsistence production.[36]

Table 7.4 Malaya: Planted rubber, 1898–1921 (100,000 ha)*

Year	European Plantations	Asian Smallholdings	Total
1898	0.8	—	0.8
1899	1.6	—	1.6
1900	2.4	—	2.4
1901	4.6	—	4.6
1902	6.1	—	6.1
1903	8.1	—	8.1
1904	11.3	—	11.3
1905	18.6	—	18.6
1906	39.3	—	39.3
1907	68.0	0.8	68.8
1908	95.9	7.3	103.2
1909	117.0	18.2	135.2
1910	152.6	66.4	219.0
1911	199.9	103.6	303.5
1912	239.2	142.0	381.2
1913	261.4	173.0	434.4
1914	272.0	200.7	472.7
1915	288.1	233.9	522.0
1916	316.5	262.3	578.7
1917	383.7	287.3	671.0
1918	424.9	338.3	763.2
1919	453.7	380.4	834.1
1920	478.4	404.3	882.7
1921	493.7	412.8	906.5

* Including Labuan, whose area had reached 700 hectares by 1920.

Source: C. Barlow, *The Natural Rubber Industry* (Kuala Lumpur: Oxford University Press, 1978) Table 2.2, p. 26.

The great expansion of rubber acreage (Malayan rubber accounted for over half of world natural rubber production between 1919–1922) led to overproduction and the consequent introduction of restriction schemes. The Stevenson Restriction Scheme (1922–1928) affected only British rubber-producing countries and resulted in stimulating production in other countries, especially the Netherlands East Indies. Furthermore, it was more difficult to control smallholder production compared to estate production and consequently the latter was favoured by the Restriction

Scheme. This resulted in the under-assessment of peasant production and over-assessment of estate production in Malaya.[37] Following the Great Depression, an International Rubber Restriction Scheme was instituted in 1934 and renewed in 1938. Unlike the earlier Scheme, the 1934 arrangement included the Netherlands East Indies. In Malaya, government discriminatory policies against the smallholders continued, and various aspects of the 1934 regulation served to under-assess smallholding production.[38]

On the whole these restriction schemes, which greatly slowed the expansion of Malayan rubber acreage and exports, were not in Malaya's best interests for they prevented the country from taking advantage of low cost production, especially on smallholdings. The share of smallholdings and plantations is shown in Table 7.5 below. Thus between 1930 and 1940 world rubber output grew by 70 per cent, but Malaya's production only grew by 21 per cent.

In Sabah, the first major export crop to take off was tobacco, but it had a very short history. In its heydey there were 61 plantations concentrated mainly on the northeast and east coast around Marudu Bay and far up the great rivers Labuk, Sugut, Kinabatangan and Segama and around Lahad Datu, Tawau and Sandakan. The majority were under corporate direction of Dutch and German companies, though there were a number of individual proprietary owners. As the first major export commodity, it provided a much needed stimulus to the economy as a whole and to the finances of the Chartered Company in particular. It also pioneered the way into the interior by way of the river systems and promoted the development of the northeast and eastern coasts of Sabah.

Additionally, the industry sustained the territory in the critical years of its beginnings and indirectly contributed to the opening up of the west coast. Revenues from the export trade were utilised to start a rudimentary system of land transport especially in the West Coast residency and the Interior Residency. Finally, it led to Chinese immigration and settlement in Sabah which contributed to the expansion of other export industries, and hence had a multiplier effect on the economy.[39]

As in Malaya, rubber was to have a far more significant impact on Sabah's economy, and it also led to a geographical shift in the location of the plantation industry from the east coast to the west. Indeed, the rubber industry facilitated an upturn in production, combining elements such as extensive commercialised production together with an infrastructure (representing fixed capital), and a large wage labour force, all of which ushered in a phase of rapid growth in per capita output as well as an increase in population growth. Whereas the tobacco industry had been localised, concentrated on the east coast and exhibited characteristics of 'shifting cultivation', rubber had a major structural input on the economy of the indigenous people in establishing a more sedentary form of agriculture and impinging on land rights.

Table 7.5 The Federated Malay States: Shares of smallholding and plantation rubber production, 1920–1940

	Smallholdings		**Plantations**		**Total**
Year	Tons	Share in Total, %	Tons	Share in Total, %	Production tons
1920	N.A.	N.A.	N.A.	N.A.	101 300
1921	N.A.	N.A.	N.A.	N.A.	94 500
1922	N.A.	N.A.	N.A.	N.A.	128 500
Introduction of the Stevenson Restriction Scheme					
1923	33 300	32.9	68 000	67.1	101 300
1924	30 900	33.0	62 600	67.0	93 500
1925	35 400	33.0	71 800	67.0	107 200
1926	52 900	33.0	107 300	67.0	160 200
1927	42 100	33.0	85 500	67.0	127 600
1928	57 600	33.0	116 900	67.0	174 500
End of Restriction					
1929	110 300	42.2	151 100	57.8	261 400
1930	110 200	43.9	140 800	56.1	251 000
1931	105 400	42.7	141 400	57.3	246 800
1932	97 400	41.6	136 500	58.4	233 900
1933	110 800	44.6	137 400	55.4	248 200
1934 Jan.-May	57 000	51.7	53 300	48.3	110 300
Regulation Introduced					
1934 June-Dec.	56 900	40.3	84 400	59.7	141 300
1935	72 100	36.0	128 300	64.0	200 400
1936	67 700	36.1	119 900	63.9	187 600
1937	96 800	37.6	160 600	62.4	257 400
1938	58 730	31.9	125 400	68.1	184 130
1939	59 600	32.3	125 000	67.7	184 600
1940	109 800	39.2	170 200	60.8	280 000

Source: Lim Teck Ghee, *Peasants and Their Agricultural Economy in Colonial Malaya 1874–1941* (Kuala Lumpur: Oxford University Press, 1977) Appendix 4.2, p. 254.

Initially, rubber production was slow to develop because of two main factors – the high cost of labour and the lack of investor confidence in a relatively 'remote' and difficult region. Here again, as with tobacco, special concessions had to be introduced to attract foreign investment. The main incentive lay in the granting of land. The state granted large blocks of land on long-term leases with no more than peppercorn rents (£5 an acre/0.4 ha). Interestingly, rents were on average about half those of the Federated Malay States and premiums on top quality land were much lower. The rubber companies were also given exemption from export duty on rubber for a period of fifty years.[40] This exemption from subsequent export duty continued as a regular condition for all alienations for rubber, whether for large or small holdings until 1924.[41] Moreover, the Company guaranteed a four per cent dividend on the paid-up crop for six years (that is, during the non-productive period) to all companies.

The Company also embarked on a programme of railway construction on the west coast to open up new areas for rubber cultivation. As a further inducement, the Department of Agriculture cleared and prepared potentially suitable sites alongside the railway line. The liberal land laws and related policies led to the formation of twelve rubber companies initially, the first in 1905 and others in successive years up to the 'boom' year of 1910. These twelve rubber companies had a combined concession area of 103 000 acres and a capital value in excess of £1 million. Rubber production thus started as foreign-dominated and capitalistic, and technical and managerial expertise was provided largely by the Dutch and the Germans, as had been the case earlier with the tobacco industry. Although there was not the same degree of physical continuity between tobacco and rubber plantations as elsewhere in the region, institutional continuity remained strong with the larger rubber and tobacco estates often constituted under the same corporate umbrella. As with the mining industry, the Chartered Company also went into rubber planting through subsidiary companies.

After 1924, the planted area increased considerably with both indigenous farmers and Chinese cultivators entering the scene. In 1928, the area under estate cultivation totalled 27 114 ha compared with 11 658 ha under smallholder cultivation. By that year, there were 30 rubber companies with an issued capital approaching £4 million.[42] Sabah was not a party to the Stevenson Rubber Restriction Scheme (1922–1928) and the greater part of smallholder cultivation in fact took place during the period when the scheme was in place.[43] The growth in rubber exports was spectacular, although not as dramatic as in the Federated Malay States. Rubber became the mainstay of Sabah's economy and prosperity, and accounted for between 60 and 70 per cent of the total value of the territory's exports.[44]

As the decline in prices worsened in 1930–34, the Chartered Company bowed to the interests of western capital in Malaya, and despite the fact

that Sabah was a relatively insignificant rubber producer it became a signatory to the International Rubber Regulation Agreement (IRRA) in 1934.

With rubber Sarawak was also drawn more completely into the orbit of the international economy. Although the Brooke administration had experimented with rubber cultivation the crop did not catch on with European investors until after the turn of the century. Two persons are credited with its expansion in Sarawak. The first was Ernest Hose (nephew of the then bishop of Sarawak and brother of Charles Hose who had played a vital role in the development of the petroleum industry), and the second was Charles Brooke. The former pioneered rubber cultivation through the Borneo Company while the latter fostered smallholding cultivation among the indigenes and Chinese smallholders.[45]

The earliest, and for a long time the only large-scale rubber plantations (five) in Sarawak belonged either to the Borneo Company or were acquired as proprietorships by former Borneo Company employees, representing investors who were familiar with Sarawak and who already had considerable investment in the state. The Borneo Company naturally controlled the marketing of rubber in the territory.

Charles Brooke fostered rubber cultivation among Chinese settlers in Sibu and in addition to seed distribution introduced liberal planting and land regulations. But the greatest expansion in rubber in Sarawak took place among the indigenous smallholder producers. The Malays in the southwest of the country were quick to grasp the profitable opportunities the new crop offered. They set up their rubber gardens with padi farms in between and adjusted their time schedules to include work on the gardens. The coastal Melanau also switched to rubber and the Dayak communities followed suit. For all these communities a combination of subsistence agriculture with new cash crops posed no major difficulties as maintenance requirements were light and most of the tapping could be done in the early morning before attending to other tasks. A large number of the rubber gardens were operated on a family basis, and only occasionally was employment offered on a share-cropping basis. By 1935, it was estimated that the 'members of the pagan tribes, the great majority of them Ibans, owned more than one-half the rubber smallholdings in Sarawak.'[47] But Dayak and Malay holdings were small, averaging 0.6 ha. The average Chinese holding was 2.5 ha though 16 per cent of Chinese holdings were more than 40 ha. However, many Dayaks owned more than one holding. By 1940, a total of 97 000 ha was under rubber.[47]

In the international rubber stakes, Sarawak was a very small rubber producer. Rubber production was also predominantly a smallholder activity,[48] was labour intensive, and the relationship between input and output was very favourable. Nevertheless, because Sarawak was integrated into the world economy, its insignificant rubber status notwithstanding, the Brooke administration elected to participate in the Stevenson

Restriction Scheme. Government intervention, in favour of metropolitan-based plantation interests was also evident when Sarawak decided to participate in the International Rubber Regulation Agreement despite the fact that Sarawak's interests as a smallholder rubber producer were not served.

A comparison of the three administrations, one a protectorate, one a 'private' colony, and the third, a chartered Company territory, shows that as far as commercial agriculture was concerned, events followed a similar pattern. In all three areas, specialisation in a few export crops occurred, not unlike other colonies and protectorates. In all three territories the interests of western capital prevailed, although the Brookes consistently claimed that they were in Sarawak to protect 'native interests'. The biggest change as far as the indigenous people were concerned was the commercialisation of peasant agriculture, and economic and social change from around 1850 to 1940 flowed essentially from the impact of international commerce on these territories. Nevertheless, while the disposable incomes of the peasants increased, there was no widespread structural change in peasant society arising from the rubber boom. The peasants' role was limited to producing latex, or rubber sheets which were passed on to Chinese middlemen who in turn passed the latex or sheets to western exporters, principally the agency houses. The peasants were not involved in rubber processing or marketing, nor did they have a say in the regulation of rubber supply or its price. They were largely peripheral to the world markets they supplied.

Forest Resource Utilisation

In the expansion of the export economy, the trade in forest products played an early transitional role with forest products like camphor, rattans, beeswax and resins and marine products like sea cucumbers and tortoiseshell being exchanged for tea and luxury goods from China. This trade in forest products was soon superseded by the trade in minerals and agricultural crops, and forests (especially in Malaya) gave way to commercial crop production.

Prior to the Second World War, timber played a relatively insignificant role in Malaya and Sarawak. In Sabah, the meagre revenues from mineral resources forced the Chartered Company to turn its attention to its timber resources. In 1920, in partnership with the agency house of Harrisons and Crosfield, the Chartered Company formed the British Borneo Timber Company Limited (hereafter referred to as BBT) and granted it a vast timber concession covering 95 per cent of the forests of Sabah. The original license was for 25 years, plus two additional periods of ten years each.[49] To ensure that the new undertaking was run along sound lines, the Conservator of Forests was appointed local manager of the BBT. In granting this monopoly to the BBT, the Chartered Company Administration, like

the Brooke Administration in Sarawak, formally acknowledged that monopolistic concerns were the key to encouraging investment on a scale thought necessary for the effective exploitation of their respective territory's natural resources. Unlike the Brookes however, the Chartered Company was not averse to investing in such concerns itself.

The creation of the BBT led to more extensive timber exploitation in the state. Nevertheless, as a monopolist, the BBT saw to it that Sabah's highly desirable hardwoods were extracted at low levels in order to keep prices high. In terms of the export trade, timber became the second most valuable export after rubber after 1921 and during the Depression, timber became the principal export commodity.

The Trade in Staples

The international economy which emerged in the nineteenth and early twentieth centuries resulted in significant changes in the commerce and trading patterns of Malaya, Sabah and Sarawak. The foci in these trading patterns included both old and new ports in all three territories. In Malaya, Penang, Melaka and Singapore provided the entry ports for the opening up of hinterland in the Peninsula, while Kuching and Sandakan played comparable, though smaller, roles in Sabah and Sarawak.

There were three major components or flows in the trade patterns of the ports. These were: exports to the West; imports from the West; and the intra-Asian trade. Each of these grew at varying rates over time. Exports to the West increasingly comprised industrial raw materials, principally tin and rubber. The return flow of imports consisted principally of cotton piece goods. The intra-Asian trade included foodstuffs, mainly rice.[50] The primacy of Singapore in the trade flows was closely related to the dominance of British enterprise and capital in the region, and was facilitated by two mercantile networks – British agency houses and Chinese trading firms. The agency houses were important instruments of British commercial enterprise and mediated the import of capital from overseas and the export of raw materials to European and American markets. In time they expanded to take on a variety of other activities, acting as agents for shipping lines, insurance companies, banks and other enterprises and some became directly involved in production, as noted earlier. Some of them became very powerful, for example, Guthries, and Bousteads in Malaya, the Borneo Company in Sarawak and Harrisons and Crosfield in Sabah. The importance of these agency houses in all three territories may be understood in terms of providing capital and expertise in distant and underdeveloped regions, and in providing a range of services in economies which could not support individual enterprise due to the small size of the market. The Chinese trading firms provided a vital link between the agency houses and the local communities in three main ways. Firstly, they engaged in barter trade with indigenous traders who came to

the main ports; secondly, they journeyed into the interior to establish direct contacts with local sources of production; and thirdly, they financed local production through cash advances or goods on credit. They therefore served as agents for local communities, collecting primary produce from them, and were also responsible for stimulating production.

The mercantile networks complemented each other and thus facilitated the development of foreign trade. By the 1920s, the various ethnic groups had settled into the economic relationships which were to characterise their dealings with each other. Crucially, the economies of the three territories had become firmly peripheralised and dependent in international trade.

Economic Frameworks, Policies and the State

In the socio-economic transformation of the three territories, provision of economic frameworks formed the most significant of the services provided by the administrations. The first was the enforcement of law and order and the assurance of security. The second was an effective legal and administrative system which included the formulation of a western-style land tenure system that replaced traditional systems of landholding. As discussed earlier, regulations and licences were also introduced to deal with mining and the utilisation of other resources in the states. The third was a sound financial system. The Sabah and Sarawak governments linked their currency to the Straits dollar, with all three ultimately tied to sterling, thus providing the stability needed for currency exchange. They also facilitated banking and insurance facilities. The most significant aspects of economic management however were the provision of infrastructure, especially transport, and the organisation of labour, both of which are the focus of discussion of this section.

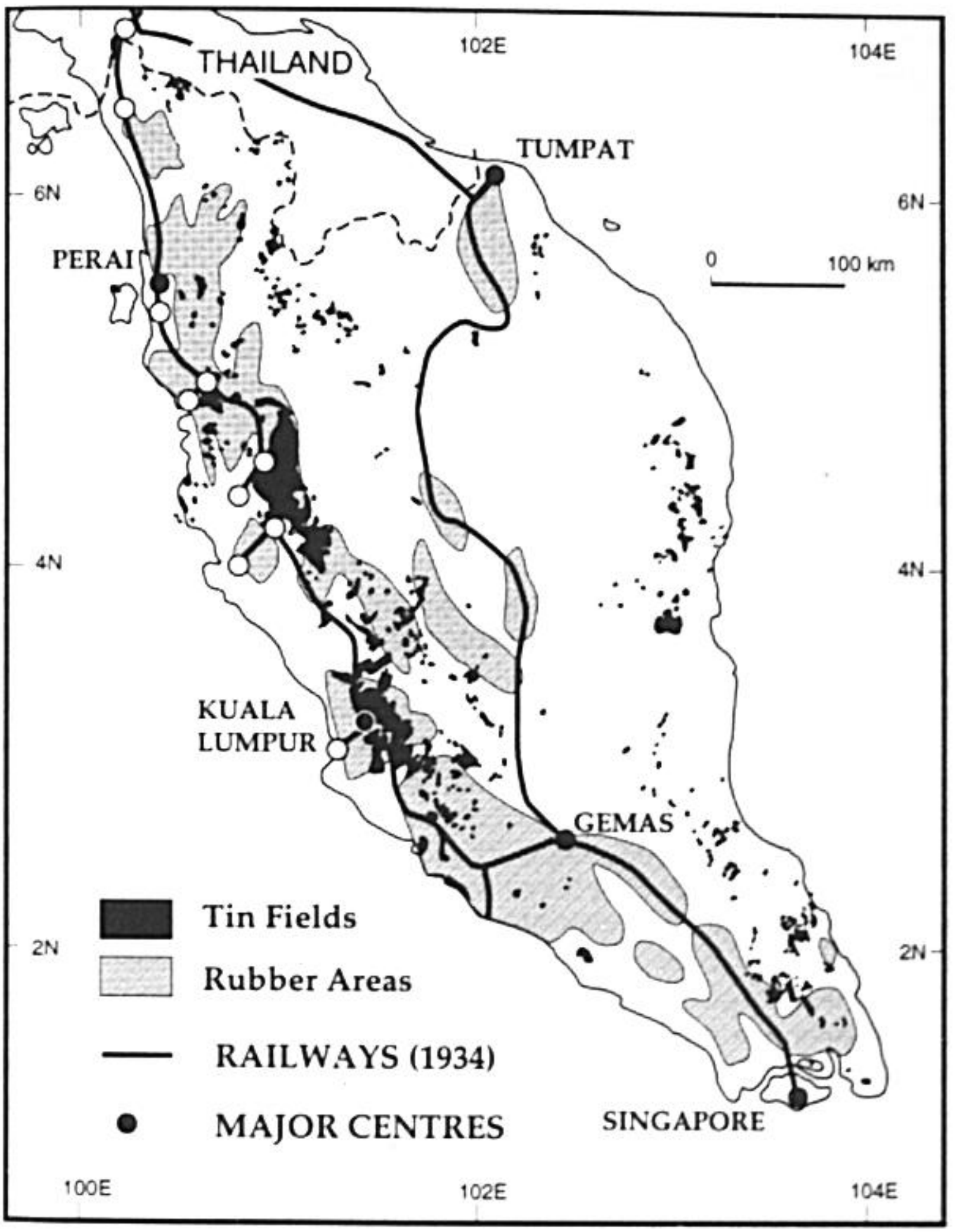
Transport Development

It is in transport development that a major difference between the British, Brooke and Chartered Company administrations becomes apparent. While the British and the Chartered Company acknowledged the importance of transport as an agent in influencing economic development, the Brookes were reluctant to invest in this sector, preferring to rely on the extensive river systems. Consequently, developments in land transport in Sarawak were minimal and the principal emphasis was on sea transport, because even the Brookes recognised the importance of maintaining links with Singapore. In Malaya the rivers formed the main highways upon which the tin ore and other commodities were transported to the coastal ports. River transport was supplemented by cart transport, utilising tracks that joined the mines to riverine villages. Constraints of river and cart transport subsequently led to the development of railroads in Malaya. The

Sabah government, like the Malayan government, saw railroad development as the 'key' to opening up the interior. Consequently, the railway system in both these territories functioned as an instrument of the expansion of the world economy, designed to facilitate the 'reproductive' capacity of the territories. Therefore its specific form reflected the features of the larger capital growth process, and investment based on cost advantage was thereby concentrated in the western half of both Malaya and Sabah. Subsequently, a complex of interlocking circular and cumulative changes took place in the western half resulting in wide regional inequalities between the two regions. From a geographical viewpoint this spatial dualism was most evident in the creation of export-oriented enclaves and the associated infrastructure concentrated in the western half.

Broadly, three phases may be distinguished in the development of the railway system in Malaya, corresponding approximately to the three stages in British political involvement in the peninsula. In the first period (1885–1896), short latitudinal lines were built in the western half of the peninsula to serve the tin mining areas. These lines linked the inland tin-producing centres to coastal ports from which the ore was shipped to either Penang or Singapore for smelting. The localised nature of economic penetration was congruent with the piecemeal development of the infrastructure. The second period of railway construction (1897–1909), was marked by the construction of a north-south trunk line which connected the original latitudinal lines. This process of railway amalgamation had its political counterpart in the consolidation of British rule in the four western states of Perak, Selangor, Negeri Sembilan, and Pahang by the creation of the Federation of 1896. The final stage in the development of the railway system (1910–1931), was consistent with the needs of commercial (plantation) agriculture which was not confined solely to the Straits Settlements and FMS. Politically, this period marked the outer limits of the British sphere of influence in the country by the establishment of protectorates over Kelantan, Trengganu, Kedah, Perlis and Johor. (See Map 7.2)

Since the main function of the railways was to assist the development of an extractive economy, the pattern of railway development and the nature and frequency of the services provided were unduly biased toward the advancement of the export sector and the interests of foreign investors. Furthermore, railway development was largely confined to the western half of the peninsula where profitability of the lines, both in terms of forward linkages (lowered transportation charges resulting in greater productive efficiency of the economy as a whole) and railway revenues was assured. The pattern of railway construction also contributed to Singapore's position as a focal point by rail while Kuala Lumpur became a railway nodal point.



Map 7.2 Malaya: Rubber, tin and the railway system

As the chief transportation agency therefore, railway development was not intended to facilitate well-rounded economic development in the country. The railroads were concentrated in the western half of the peninsula and laid out in such a way as to allow for rapid transport of minerals and agricultural products from the interior to the chief ports. The major towns in Kedah, the Straits Settlements, the FMS, the Johor, where economic activity was the greatest, were connected with one another and with the centres of raw material production, while there was

an absence of such linkages between towns in the eastern half of the peninsula. The freight rates favoured the long haul of primary products to the ports from the interior. Furthermore, since the tariff structure favoured large clients, these interests experienced a greater reduction in transportation costs in comparison to most producers for the domestic market. Consequently, the railroads facilitated the transformation of Malaya into an export-oriented, lopsided economy, heavily specialised in tin and rubber.[51]

Road development in the different regions of Malaya took place at different times to meet specific needs. In the western half of the peninsula, roads were initially constructed as feeder lines to the railway or were seen as a mechanism for extending the developmental space of the west coast states. In Pahang, Johor, and the northern Malay states, they were built principally to provide accessibility or were a means for initiating economic growth. In Kelantan roads were also undertaken for security reasons. Compared with the railway, roads were less substantial lines of communication, and road building could be carried out within a flexible policy. Moreover, road development could be carried out in stages, depending on the financial 'health' of the states and road improvements such as metalling could be undertaken when funds permitted.

Road development policies aimed at the construction of north-south roads which could be connected with those of neighbouring states to facilitate inter-state communication. By 1895 there was a fairly complete through cart-road from Melaka in the south to Province Wellesley in the north, and seven years later it had become a main trunk road, 360 miles long. In 1928 a through road ran from Johor Baru in the south to the Siamese border in the north. In the east coast states and Johor, roads enabled many export products to be transported by land. The growth of the road system was accelerated by technical innovations in road transport, including the development of the internal combustion engine and resulting in the expansion of motor transport and road haulage services. The configuration of the country dictated the almost parallel location of the road and railway systems and subsequently led to competition between the two transport systems.

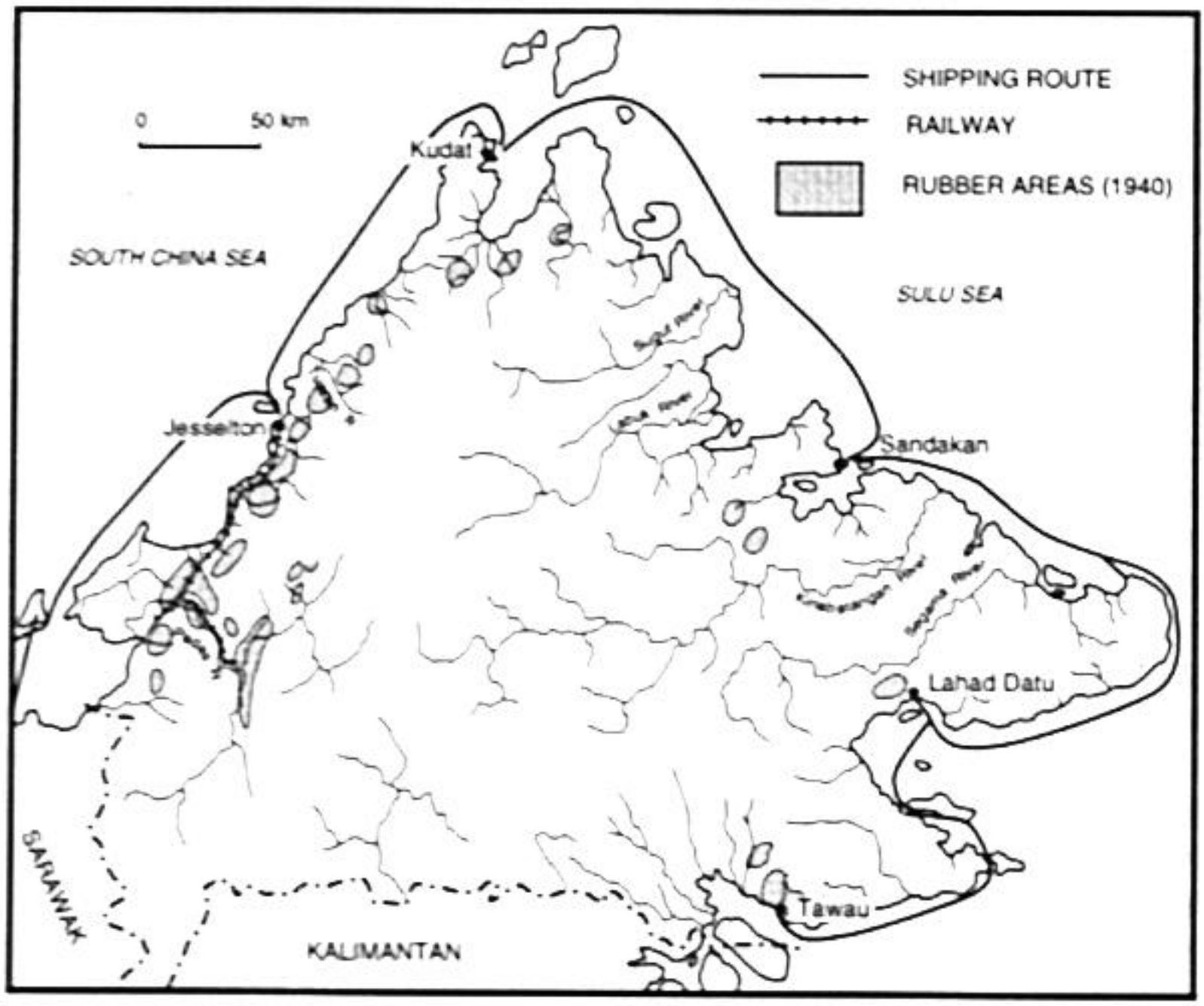
In Sarawak the Brookes were reluctant to undertake costly developmental initiatives and believed that road construction was an unnecessary expense since most settlements and crops (for example, sago and rice), were located near rivers. Monopoly concerns like the Borneo Company and Sarawak Oilfields built their own roads to serve their concessions, but these were short local roads. Consequently, the only roads that were constructed during the first seventy years of Brooke rule were bridle paths, which were nothing more than grass tracks, four to five feet wide, and short, poorly surfaced or unsurfaced earth roads. The bridle paths were suitable only for ponies, or in places, bullock (oxen) carts, and connected administrative posts with the outlying districts. The roads were

restricted to the immediate vicinity of the towns and the main distinguishing feature was that they were not connected to each other. In the 1930s there was a spate of road building principally inspired by the need to 'keep the peace' in the wake of Dayak unrest in the territory. Only one railroad was built, and it had a short life span. Briefly therefore, after a hundred years of Brooke rule, inland waterways still retained much of their significance as the traditional highways of Sarawak and the main areas of development and population concentration remained closely linked to the coast and the major rivers. Coastal trade and communication depended upon small vessels plying regularly between Kuching and the main coastal and river ports. Most of the local coasting vessels acted as feeders to ocean-going vessels calling at Kuching and Sibu. Thus a pattern of internal water transport continued which involved extensive transhipment and extra handling of cargo, often more than once, before the destination was reached.[53]

In Sabah, as noted previously, rail transport was also viewed as a prerequisite for capitalist development and a west coast line was completed in 1905. It was 116 miles long; served as the principal means of communication on the west coast; and facilitated the growth and expansion of rubber in the state. (See Map 7.3) It also intensified the export-orientation of Sabah's economy. Road development played a similar role in the state. Initially, roads (or rather the early bridle paths) were seen as instruments to remind the natives of the Chartered Company's power and they also helped keep the peace in the state. Subsequently, roads were also built to serve as feeder lines to the railway. These roads were principally concentrated on the west coast and in the vicinity of the larger towns.[54] As in Malaya and Sarawak, the main areas of capitalist development and population concentration remained closely linked to the coast.

The Organisation of Labour

In common with many other states in Southeast Asia, nineteenth century Malaya, Sabah and Sarawak were land abundant, labour-scarce regions and labour rather than land represented a source of wealth for the ruling class. This in turn influenced authority patterns and relationships and the characteristic way in which the ruling class had organised labour was through slavery and forms of bondage. It was only in the late nineteenth and early twentieth centuries that these forms gave way to different, though not necessarily more 'free' forms of labour organisation. This was mainly a function of the integration of these territories into the wider international economy in the context of the spread of capitalism. Economic development and extension of state control by the three administrations thus provided conditions for the gradual, albeit uneven, elimination of many varieties of traditionally coerced labour.



Map 7.3 Sabah: Distribution of rubber and the railway system

Essentially, the labour policy of the three administrations involved the importation of immigrants for the expanding economies, principally from China, India and the Netherlands East Indies, resulting in irreversible changes to the ethnic composition of the population in all three territories.

The first sector to require a large labour force was the mining industry which relied on labour-intensive production techniques. In the absence of a local proletariat, the Chinese capitalists preferred to employ Chinese indentured labour imported under the 'credit-ticket' system. Under this system, a Chinese coolie-broker paid the expenses of the *sinkheh* (new immigrant) who was held on arrival in the Straits Settlements until the debt incurred was paid by his employer in exchange for the contractual obligation of the *sinkheh's* services for a specified period. The transaction was concluded between broker and employer, with the migrant worker usually unaware of the place, conditions of work or of his employer. The prices obtained for the migrant workers varied with the economic conditions then prevailing in the industry and labour requirements. This 'cheap' labour enabled Chinese mines to produce at low cost. The conditions of work were exploitative and the workers were controlled both through economic and extra-economic means. An important instrument of

control was the secret society which Chinese employers utilised to keep their workers in check. As noted previously, the *kongsi* system, under which many workers were employed, ensured some assurance of income for them. Under other systems, for example, the *hun* or tribute system, remuneration depended on the success or failure of the mining venture.[55] The importation of Chinese labour under the indenture system was banned in 1914, by which time, 'free' or voluntary labour had replaced the former.

Western dominance in tin mining in the twentieth century led to a reduction in the total wage labouring force. Chinese employment in the tin mines in the late 1930s was 61 310, compared to 189 100 in 1911; the percentage of Chinese in the mining labour force declined from 96 per cent in 1911 to about 81 per cent in the 1936–40 period.[56] One reason for this was an increase in the non-Chinese labouring force related to European dominance and the introduction of the dredge. Moreover, government adjustment of immigration policy during recession conditions in the industry also resulted in declining labour migration to Malaya.

For the rubber industry and government undertakings such as road and railway construction, the British preferred Tamils from India, then another British colony.[57] They were preferred for two reasons. Firstly, the British believed them to be a peaceable and easily governed race, making it more convenient to deal with them than with Chinese labour. Secondly they also believed that an Indian influx should be encouraged to counter-balance the preponderance of the Chinese.[58]

In the late nineteenth century, Indian labour was principally recruited under the indenture system. The expansion of coffee and later rubber cultivation led to the emergence of an alternative system of recruitment through the *kangani* arrangement. The *kangani* system was essentially a personal system of recruitment whereby a plantation owner sent a *kangani* or foreman back to his village to recruit labour directly, as opposed to obtaining labour through recruitment agencies. Though technically 'free', the labourer was in fact tied to his employer. The *kangani* system had the backing of the colonial government which subsidised steamship fares from India between 1887 and 1892. In 1907, the FMS government established an Indian Immigration Committee with an accompanying fund to finance the inflow of Indian labour. Up to 1920, Indians comprised between 66 to 75 per cent of the rubber plantation labour force. The total number of Indian arrivals rose from 15 000 a year between 1884–99 to 61 000 a year between 1900–20.[59] Indian labour migration under the indentured labour system was banned in 1910, and after the 1920s, assisted immigration, including that of *kangani* recruited labour, practically ceased through restrictions on labour migration. After 1934, when assisted immigration was revived, *kangani* recruitment accounted for only a small part of the Indian labour force, the greater proportion of workers arriving as 'free' labour.[60]

The Javanese formed the third largest labouring group in the Malay states. They were employed principally on the plantations and, like the Indians and Chinese, came initially as indentured labour. Many of them chose to settle in Malaya on completion of their contracts. They were also eligible as settlers under rice cultivation schemes.

Briefly therefore, between 1911 and 1931 the government encouraged unrestricted immigration to provide the manpower for the expanding export industries. When world prices of tin and rubber fell during the Depression of the 1930s, these workers were repatriated by the government to avoid facing the consequences of large-scale unemployment. Between 1931 to 1947, a restricted immigration policy was adopted and the immigration 'tap' was temporarily tightened. This labour policy was only relaxed after World War II when the demand for primary commodities led to increased production in the country.

As noted earlier, the colonial government's labour policy left its mark on the demography of Malaya in three main ways. First, the population of Malaya increased from approximately 2.6 million in 1911 to approximately 5.7 million by 1947. Second, this increase was primarily due to immigration, as shown in Table 7.6.

Table 7.6 Malaya: Population by racial group, 1911–1947

Year	Malaysians[1]		Chinese		Indians & Pakistanis[2]	
	'000	% of Total Population	'000	% of Total Population	'000	% of Total Population
1911	1 438	54	917	34	267	10
1921	1 651	49	175	35	472	14
1931	1 962	45	1 709	39	624	14
1947	2 544	43	2 615	45	600	10

1 The term Malaysians includes Malays and immigrants from the Netherlands East Indies
2 No distinction until 1947

Source: *Census Reports, 1911–47*

Moreover, by 1921, the immigrant population equalled the indigenous population. Ten years later, the immigrant population exceeded the local population and by 1947, the Chinese represented the largest ethnic group in the country. Third, with the integration of Malaya into the world economy and the subsequent influx of immigrants into the areas of export-centred activity, the demographic structure of the different states was directly determined by the effects of colonialism and government

labour policy.

Colonial policy therefore resulted in a fairly continuous belt of high immigrant population of an average density of 150 persons per square mile, beginning from Penang and South Kedah, extending southwards along the west coast of Malaya toward Singapore and stretching inland for about forty miles to the foothills of the Main Range. Only one area of high population density existed on the eastern side of the peninsula, namely the Kelantan Delta, comprising almost entirely Malays (see Appendix 7.1). More importantly, the cultural and economic gap between the various races was maintained by the British. The Chinese had become an urbanised group, unlike the Malays (and the Indians who were largely concentrated on 'rural estates') and many seized the chance to take advantage of the opportunities the expanding export economy offered. The 'divide and rule' policy of the British further served to intensify this trend, as did the dual system of administrating the different ethnic communities.[61] The plural society thus consisted of three generalised ethnic communities – Malay, Chinese and Indian.

In Sabah, the growth of a wage labour force followed an essentially similar pattern. Nevertheless, the Chartered Company was not as successful as the British in Malaya in attracting sufficient numbers at the requisite times. China was regarded as the main source of labour supply and the Company was directly involved in labour recruitment. In the context of the expanding capitalist economy, Chinese labour migration took place in three waves: first, for employment in coal mining and the tobacco estates (1880s–1890s); then for government undertakings, especially the railway (1890s); followed by recruitment for rubber plantations and timber camps (1900 onwards). Conditions of recruitment varied according to the type of enterprise involved. In the early days of Company administration, the indentured labour system prevailed. This was followed by the 'contractor' system, whereby an estate owner or timber concessionaire dealt directly with a contractor or *towkay* who hired a gang of labourers to carry out specific tasks. In effect, the labourers were hired by the *towkay* who provided accommodation, stores and often meals through a *kongsi*-type arrangement. Finally, there was the 'free' labourer who worked either through a contractor or was employed directly by his employer at his place of employment. Another source of labour supply was Java and the Company signed an agreement with the Dutch government in the Netherlands East Indies to recruit indentured Javanese labour. This agreement lasted from 1914 to 1937 during which period approximately 10 000 Javanese were recruited under the indenture system to work in Sabah.[62]

In Sarawak, the need for wage labour was not as urgent, especially in the agricultural sector. The Brookes wanted Chinese immigrants as settlers to 'populate' the state. The mining sector, particularly the petroleum industry, was the principal employer of Chinese wage labour.

Indian wage labour in both these territories was very small, and certainly not for lack of trying on the part of the governments. The relatively remote location of the two territories and the better opportunities available in places like Malaya and Fiji were mainly responsible for the small level of Indian recruitment in these states.

Thus during the period under study, 'modern' state formation and the integration of Malaya, Sabah and Sarawak's economies into the wider economy did not lead to the superseding of all forms of 'unfree' labour. Rather, all states sought workers for mines, oilfields or plantations, and in the process introduced new forms of 'bound' labour in the shape of indentured labour. Furthermore, because different ethnic groups were employed in these sectors, there was no unity among the workers and no labour movement developed. At any rate, worker organisation was not encouraged and was punishable by deportation. Consequently, there was very little evidence of a transition to a system of free or 'freer' wage labour. Moreover, the policy of 'divide and rule' resulted in the emergence of a plural society, characterised by differentiation in employment patterns, location of employment and residence, though less so in Sabah and Sarawak.

Economic and Social Transformation

By 1940 the economies of Malaya, Sarawak and Sabah were characterised by a small but rapidly growing, largely rural population engaged in low productivity semi-subsistence agriculture; enclaves dominated by western and Chinese capital; a dependence on the export of a few primary commodities; modern transportation linkages (excepting Sarawak); and a tiny manufacturing sector. Though governed as independent states, they were nevertheless part of the wider British trading empire centred on Singapore and Hong Kong. These territories exhibited many of the organisational principles and practices of other European colonies in the Southeast Asian region and differed from the preceding administrations in several major ways.

Firstly, a western bureaucratic-style administration was imposed on the three territories. Senior administrators were recruited from Britain to fill posts associated with the widening scope of bureaucracy including departments of finance, revenue, public works, land administration and trade, all of which were aimed at making the territories economically viable. A number of functional units were also established such as forestry departments and labour protectorates to ensure better economic management. At the same time, to keep costs down, existing indigenous chieftaincies (especially in Sabah and Sarawak) were either adopted or reinforced, or new political authorities created, leading to the establishment of parallel systems of administration, both obedient to the central authority.

Secondly, the expanded size and broader scope of government also meant increased governance of a whole range of activities which were aimed at both administering and providing 'development' to the people. As noted previously, the land regulations established British, Brooke and Company sovereignty over land in their respective territories; peasants were forbidden from alienating new forest land; and *ladang* cultivation was frowned upon and discouraged. The administration also relied on indigenous *corvée* labour to build paths, provide porter services and carry out various government projects. Taxes were levied on the indigenous population in the form of a poll tax, boat licences, fees on shifting cultivation, on *tapai* (local liquor) and on birds' nests collection. Moreover, censuses made the evasion of these taxes more difficult and the government impinged upon almost every aspect of life. Immigrant labour was no better off. Workers were caught up in a growing body of regulations and procedures, subjected to corporal punishment; policed by local garrisons and gaoled for absconding. The encouragement of foreign immigration also led to the assigning of specific economic roles perceived appropriate to the various communities. Social structures too changed as enclaves with immigrant labour and populations emerged in towns like Singapore, Penang, Kuala Lumpur, Ipoh, Kuching, Kudat, Miri, Sibu, Sandakan and Jesselton.

In summary, the economies of Malaya, Sabah and Sarawak were transformed into peripheral economies, specialising in mineral (tin, oil) and agricultural production (pepper, rubber, oil palm) and timber. A significant consequence of this process was the uneven development both between and within the three territories. Malaya was more centrally located, and was better endowed in terms of natural resources compared to the other two territories, and experienced the greatest transformation during this period.

ECONOMIC CHANGE, 1946–63

The Japanese occupation of Malaya, Sabah and Sarawak during World War II was part of Japan's master plan to gain control over the sources of supply of vital raw materials in the region. The ease with which this was achieved is sufficiently well-documented elsewhere and need not detain us here. In all three territories, the period was one of dislocation and general economic decline marked by devastation, disruption of social services and communications, and general misery for the population. The costs of rehabilitation for Sabah and Sarawak were beyond the resources of the Chartered Company and the Brooke Administration and in 1946 the two administrations transferred Sabah and Sarawak respectively to Britain.

At a time therefore when the trend was to oversee postwar economic recovery of colonies as a prelude to self-government (and Britain was a

signatory to the Atlantic Charter declaring the rights of nations to self-determination), Sabah and Sarawak became full-fledged colonies. It is argued that in the case of these states, the British colonial interlude, despite being an anomaly, was a necessary condition for bringing these states to a similar level of 'development' as Malaya.

The keynote of colonial policy was the planned development of resources in an integrated manner. This was necessitated by three important considerations. First, the experiences of the postwar reconstruction period had indicated the urgency for systematic planning on a broader basis. This was a corollary to the regional and British Commonwealth policy for economic and social advancement of the inhabitants of British territories and colonies. Second, there was the consideration that the colonial government had to improve the sterling area balance of payments with the non-sterling world. All three regions were rice-importing areas, largely from non-sterling countries such as Thailand. Third, while Sarawak and Sabah were not major players in the production of the main export commodities from Southeast Asia (with the exception of pepper), they were part of the wider British trading economy in the region in that they produced the same primary commodities for the European and North American markets. This necessitated greater financial and economic integration with the other British territories, principally Singapore, Malaya and Brunei.

Mineral Resource Utilisation

The resumption of international trade led to a revival of the markets for the three territories' primary commodities. In the immediate postwar era, there was a world shortage of tin because stocks accumulated in the prewar period had been exhausted. The colonial government disbursed funds to both European and Chinese miners, and the latter had a much quicker recovery rate. From 1948 onwards world market production caught up with and steadily surpassed consumption, leading to a return to international commodity control from 1956. Other threats to tin included an increasing worldwide economy in its use and better recovery techniques.

In Sabah and Sarawak, the colonial government established an institutional structure and undertook geological surveys to gather information on mineral occurrence in the two regions. Since Sarawak's oil output showed signs of diminishing, exploration for new reserves continued and the colonial government extended the boundaries of the state to include marine areas of the continental shelf.

Agricultural Resource Expansion

In the agricultural sector, five major initiatives characterised colonial developmental policy and these laid the foundations for the current agricultural policies pursued by the post-independence governments. These were: firstly, greater self-sufficiency in rice and other food crops, accompanied by government outlays on irrigation works; secondly, the introduction of a diversification programme to reduce dependence on one or two export commodities; thirdly, the adoption of a more scientific approach to agriculture with related investment in research, the dissemination of research findings and the advocacy of new techniques; fourthly, investment in transport and communications to open up new areas for agriculture and enable the peasantry to transport their produce 'at reasonable cost' to ports and centres of consumption; and fifthly, the use of land settlement as an integral factor in promoting economic development.

Sterling area balance of payments was a principal determinant of colonial agricultural policy that sought to minimise imports of rice and other foodstuffs The colonial government aimed to locate an area in a British colony where sufficient rice could be grown using modern technology to satisfy the requirements of all British Southeast Asian consumers. Sabah was judged to be the most suitable location and in 1950 a pilot scheme was started in the Marudu Bay area to establish irrigated mechanical rice production. The scheme was unsuccessful, and the ascendence of the Conservative Party in Britain resulted in the project being shelved.[63] Essentially, the first stage in the policy of self-sufficiency in rice was a regulatory one, involving a rice purchase scheme, controls on the milling and movement of local rice, and rationing. This phase was abandoned when it was considered no longer feasible nor desirable to attempt to achieve self-sufficiency in rice production. The second stage involved reforming land tenure, giving technical assistance and providing credit and marketing facilities which were considered crucial to improving the lot of the farmers. The third stage focused on giving farmers access to more land through land settlement schemes, and encouraging them to diversify their crops.

The establishment of the Federal Land Development Authority (FELDA) in Malaya in 1956 resulted in the opening up of large areas of land, each consisting of 1600 to 2000 hectares, between 1956 and 1966. The main crops planted were rubber and oil palm and the largest land schemes were established in Pahang and Johor. Approximately 174 000 people (out of a total rural population of more than 7 million) were resettled on FELDA Schemes.

Land settlement schemes were regarded as a crucial component of the economic development and export crop diversification package in Sabah and Sarawak. The success of these schemes hinged upon persuading the

indigenous groups to give up their shifting cultivation activities. The principal crops involved were rubber, oil palm and cocoa, and the designation of land for the schemes meant impinging on customary land rights. On the positive side, the schemes involved drawing the peasants into the cash economy and improving living standards in the rural sector. More importantly, since the schemes were located in remote areas, the government was obliged to provide transportation and communication facilities in order for them to operate effectively. This meant improved accessibility in the rural areas.

Forests and Forest Resource Utilisation Policy

During this period forests became integral to the development process in Sabah and Sarawak and their contribution depended essentially upon their destruction. Forests were cut primarily for cash to provide government revenue for investment in other sectors such as transport. They were also cleared for agro-conversion associated with land settlement schemes. At the same time, development of the one-man chainsaw, mechanised methods of timber extraction using wheeled crawler tractors and high-lead or 'skyline' winching, and heavy road construction machinery and specialised log-hauling vehicles transformed the timber sector. The forest sector was characterised by three main developments: the demise of large monopoly concessions and the entry of greater capital investment in the sector; more efficient regulation of the forest and planned forest resource utilisation; and the introduction of new and improved technology in timber exploitation.

In Sabah, the expansion of the timber sector was remarkable. Between 1955 and 1963, there was a 13 per cent rise in exports, due almost exclusively to timber exports.[65] There was also a significant shift in the direction of trade. In 1955, the United Kingdom had been Sabah's dominant trading partner, accounting for 22.5 per cent of Sabah's exports and supplying 26.8 per cent of its imports. By 1963, Japan became Sabah's leading trading partner, accounting for 54.7 per cent of its exports,[66] although the United Kingdom still provided the bulk of the imports. The timber was exported in the form of logs. In Sarawak, there was a similar trend in timber exports. Timber exports were valued at £348 440 in 1950 and ten years later, the figure had risen to over £5 million.[67]

In summary, there was relatively little structural change in the economies of the three regions. Diversification resulted in the addition of a few new export commodities, for example, cocoa and timber, yet the export-orientation of the three economies continued. The manufacturing sector remained small. Economic change took place in the rural areas where the establishment of land settlement schemes, the use of fast-

breeding, high-yielding rice varieties, the application of pesticides and fertilisers facilitated the double-cropping of rice and advanced the Green Revolution.

By 1963 Sabah and Sarawak were also closer to each other in economic and political development. Their economies were performing reasonably well with the bulk of the total gross export earnings coming from timber. To a large extent, their economic success was due to planned economic development during the colonial period which improved upon and, in some cases, created an infrastructure, legislated a more liberal trade policy which enabled the entry of western capital and enterprise, fostered Chinese enterprise, and facilitated the organisation of labour to meet the needs of the export sector and government projects. These states were therefore much closer to Malaya, had stronger economic foundations and were better equipped for independence and merger with Malaya after the colonial period than prior to their cession to Britain.

THE MALAYSIAN ECONOMY SINCE 1963: CONTINUITY AND CHANGE

The establishment of the Federation of Malaysia brought together economies at different levels of development – the staple port of Singapore, the relatively advanced resource economy of Malaya and the less developed territories of Sabah and Sarawak which were expected to receive a stimulus from membership in the larger grouping. In anticipation of the formation of Malaysia, a World Bank mission submitted a report on the economic aspects of the federation.[68] This mission endorsed the thrust of post-colonial Malayan industrialisation policy.[69] It also urged that a Tariff Advisory Board be established to work out a common external tariff after the formation of Malaysia. Additionally, the mission recommended the setting up of a new body specially for industrial promotion. In the area of co-ordinated development planning, an integrated Five Year Plan was devised, to begin from 1966. Existing institutions comprising planning bodies and the Central Bank in Malaya were to form the basis for coordinated planning at the Federal level.[70] Overall, these policy recommendations constitute a turning point in the evolution of the modern Malaysian economy.

Just four years after the formation of Malaysia, the country (specifically Peninsular Malaysia) experienced a crisis of decolonisalisation and nation-building in the form of the post-election race riots of 13 May 1969. These ethnic riots reflected tensions over the distribution of political power and the fruits of development. In 1970, the New Economic Policy (NEP), covering the period 1970 to 1990, was launched and subsequently became the underlying ideology of national development.

The NEP had two main goals: the eradication of poverty irrespective of race; and the restructuring of society to eliminate identification of economic function with race. It aimed to combine continued development with redistribution, setting specific targets for *bumiputera* ownership (30 per cent of corporate share capital), and employment. It thus spelled a new phase in development, overturning the previous relationship between state and society. It also ended the alliance between the Malaysian state and private capital in which the state's role had been to support and promote private accumulation (both local and foreign). The state now took on the leading role and laid down the agenda with private capital in tow. The principal objective of the NEP was to increase Malay participation in the modern sector of the economy. Since it was acknowledged that this goal could not be achieved by private Malay capitalists acting alone, the government established state corporations and trust agencies to act on their behalf. The most important of the state corporations impacting on East Malaysia were Perbadanan Nasional (PERNAS, or National Corporation) which had a wide range of activities including trading, mining and securities; Permodalan Nasional Berhad (PNB or National Equity Corporation); and Petronas, the national petroleum corporation which assumed control of the extensive new oil resources. The development strategy primarily expressed the demands of the Malay business and intelligentsia network who wanted the state to be interventionist in favour of 'Malay' business. Since state power depended largely on the support of Malay peasantry, the elimination of rural poverty was also critical to the implementation and success of the NEP.

By the mid 1970s, there was concern among some *bumiputera* leaders that their simple reliance on reaching prescribed targets through compliance with government policy might not achieve the NEP aims, especially in industry. In 1975 therefore, the Malaysian government passed the Industrial Coordination Act (ICA) whereby a licensing system was instituted giving government the power to insist that firms meet NEP requirements in terms of share ownership and employment structure. The Act, which opened the way to arbitrary bureaucratic decisions, drew adverse criticism from both foreign and non-*bumiputera* interests. Although the Act was modified in 1977, in ways which generally satisfied most foreign interests, Chinese interests were not so easily satisfied and the Chinese scaled down their investments.

In the mid-1980s Malaysia experienced a severe economic crisis as a result of the prolonged world-wide recession, and the state was no longer in a position to inject substantial funds into the economy. By the second half of the 1980s, there were progressive moves to reduce the investment of government in economic enterprises and a corresponding shift towards privatisation. This has meant that the requirements of the ICA and the NEP wealth distribution targets were put into abeyance from 1985–6, and a relaxation of the rules governing foreign investment sought to increase

input from this source.

Essentially, state development planning and ideology during this period has had two important consequences for Sabah and Sarawak's development. Firstly, it was geared towards the utilisation of state resources to sponsor a Malay capitalist class. In practice this has meant the establishment of public corporations to acquire assets for and on behalf of Malays and managed by political appointees and bureaucrats. In the first half of the 1970s, the discovery of offshore petroleum and natural gas in Sabah and Sarawak and a combination of economic and political manoeuvring by the federal government, resulted in Petronas taking control of one of the East Malaysian states' major source of export revenue. This in turn meant that the East Malaysian states' only lucrative resource which they could then control was timber.

Secondly, the use of political prerogative shifted the concentration of wealth and power into the hands of those economic interests and politicians close to and dependent upon the Prime Minister and the ruling party, UMNO, in the case of Malaysia; and the Chief Minister in the case of Sabah and Sarawak. This reciprocal relationship between economic elites and those in appropriate political position has in fact has meant the appropriation of resources by the state for private gain by individual businessmen.[71]

Policy Issues and Economic Development

In the post-independence period the dominant trend in Malaysia has been the transition from a dependence on primary exports to a diversified economy with a vigorous industrial sector; and a rise in per capita income brought about largely by industrialisation. Malaysia's pattern of industrialisation is sufficiently well known and will not be discussed in detail here. The first phase of import-substitution manufacturing lasted until the early 1970s. Pioneer enterprises were granted tax concessions, manufacturing was diversified, and between 1960 and 1970, the share of manufacturing in the GDP of Peninsular Malaysia rose from 8.5 per cent to 13.1 per cent.[72]

The relatively small domestic market led the government from 1968 onwards to offer new initiatives to encourage production for export markets. Special concessions were provided for export industries and attempts were made to attract foreign investment that was expected to bring in new technology and provide access to foreign markets. The export-oriented development strategy also resulted in the mobilisation of large numbers of women workers in manufacturing.[73] In the 1970s and 1980s the manufacturing sector grew rapidly at an average annual rate of 10.3 per cent; its share in the GDP for Malaysia as a whole rising to nearly 27 per cent in 1990.[74] (see Appendix 7.2) Industrialisation in

Sabah and Sarawak made less progress within the manufacturing sector compared to Peninsular Malaysia. (See Figure 7.1) These states were less attractive to industrial investment primarily because of their location, limited infrastructure and higher costs (for example, electricity). Additionally, industrialisation in these states was directly related to local patterns of production.

In Peninsular Malaysia therefore, economic growth since 1963 has resulted in significant structural change. In Sabah and Sarawak primary commodity production continues to dominate the economy. Since the 1980s, petroleum, gas and cocoa production have become increasingly significant, as has the logging of tropical timber for export. Since neither petroleum, gas nor other minerals provide large benefits to these states' economy (most of the revenues flow to the central government) export earnings and tax revenues from timber have been the mainstay of the states' earnings. In Sarawak especially, this has spawned new political tensions in the state in recent years and heightened timber politics. Not surprisingly, in the contest for the huge financial stakes involved, logging practices have contributed to the rapid destruction of the forests (a process that was completed earlier in Sabah). Thus previous ideologies of forest control have currently been adopted by national elites who have strengthened their grip over forest resources, resulting in conflicts of interest for allocation of land and rights to utilise resources.[75]

In summary therefore, Malaysia has extended its previous pre-eminence in tin, rubber and pepper to palm oil, tropical hardwoods, petroleum and gas. Malaysia's impressive economic record until mid 1997 can be largely attributed to its favourable resource endowments, the relationship between the state and capitalist markets and its cultural and political preconditions. Notwithstanding this, there is a continuation of dependency upon external markets and vulnerability to external economic forces.

Epilogue

For the first time since the mid 1980s, the Malaysian economy has slowed down, its currency has plunged, and the 'miracle' of Asian growth has come under closer scrutiny. Malaysia's march towards fully industrialised status has been slowed down as well. Nevertheless, at the time of publication (March 1998), the Malaysian government has introduced economic restructuring; imposed austerity programmes; tightened rules on lending; and is seeking to reduce links between politics and patronage in an attempt to control distortions in the distribution of resources. While it is too early to predict the effectiveness of these reforms, nevertheless the concerns voiced by ASEAN leaders for collective action in the region is reassuring.

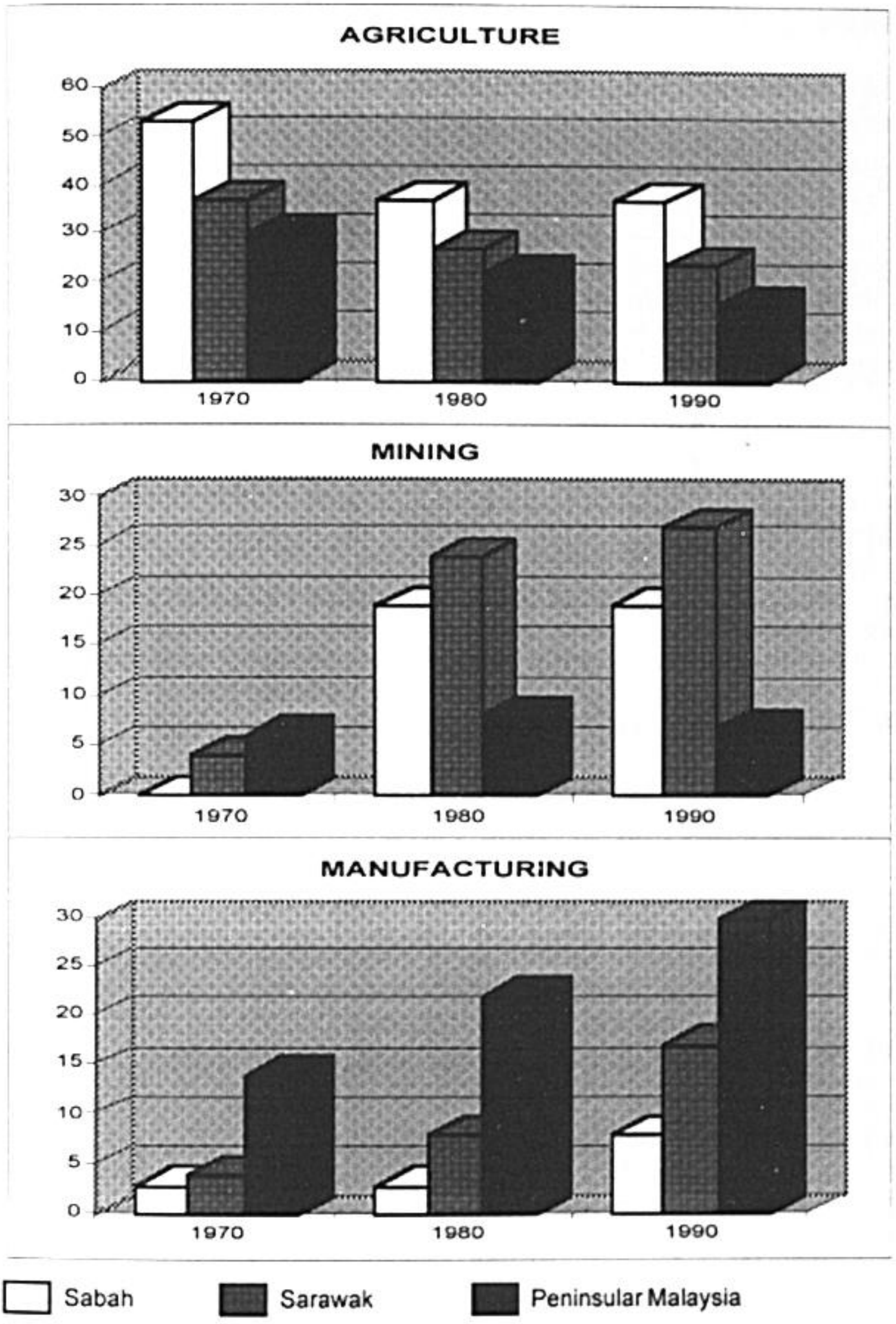


Figure 7.1 Sabah, Sarawak, Peninsular Malaysia: Gross Domestic Product by industrial origin (% of total for each year)

Sources: *The Second Outline Perspective Plan*, Table 406, *Fifth Malaysia Plan*, Table 5–2, cited in Wee Chong Hui, *Sabah and Sarawak in the Malaysian Economy*, p. 48.

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20 Agreement Book, Vol. 3, January 1902–July 1909, pp. 210–11. One of the clauses in the concession stipulated that a certain amount of oil was to be stored for the use of the British navy. See Charles Hose, *Fifty Years of Romance and Research or a Jungle-Wallah at Large* (London: Hutchinson & Co., 1927) p. 235. Hose was offered a considerable sum of money for his services, but refused this in return for a royalty on the production which gave him a significant source of revenue for many years. G. C. Harper, 'The Miri Field 1910–1972', *Sarawak Museum Journal*, Vol. X, Nos 17–18 new series (July-Dec. 1961) p. 23. See also Sarawak Shell, *The Miri Story* (Lutong: Sarawak Shell, 1978).

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25 Lim Teck Ghee, *Origins of a Colonial Economy*, Ch. 1; Emily Sadka, *The Protected Malay States* (Singapore: University of Singapore Press, 1968) pp. 342–3. See also Sudhir Kumar Das, *The Torrens System in Malaya* (Singapore: Malayan Law Journal, 1963).

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27 In general, land classified under the following categories could not be alienated and sold to Europeans:
1 Land under 'customary tenure' (broadly, land under sedentary or shifting cultivation which had long been associated with a particular ethnic group).
2 Land planted with fruit trees.
3 Land containing assorted fruit trees which were harvested by a community. This applied particularly to trees such as the durian, ramsuran and jackfruit.
4 Grazing lands.
5 Land which had been cultivated or built upon in the last three years.
6 Land with a particular sacred significance, for example, burial sites.
See M. C. Cleary, 'Plantation Agriculture and the Formulation of Native Land Rights in British North Borneo 1880–1930', *The Geographical Journal*, Vol 158, No 2 (July 1992) 172–4.

28 The felling of primary jungle and secondary jungle of more than five to six years' standing was prohibited, unless a fee of 50c per acre (0.4 ha) was paid. The headmen were responsible for collecting the fees, and stood to be fined for every acre felled without permit. See Ian Black, *A Gambling Style of Government*, pp. 218–9.

29 *ibid.*, pp. 217–8.

30 Cited in Porter, *Land Administration in Sarawak*, p. 39.

31 Land was divided into five categories: mixed zone land; native area land; native customary land; reserved land; and interior area land. Only the first two categories could be held under title and the Chinese could only own or occupy land under the first category. See also 'Native Customary Law', *Borneo Research Bulletin*, Vol. 22, 1 (April 1990) 51; Evelyne Hong, *Natives of Sarawak: Survival in Borneo's Vanishing Forests* (Penang: Institut Masyarakat, 1987) p. 43.

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41 North Borneo Rubber Commission, *Report of the North Borneo Rubber Commission* (Singapore: Government Printer, 1949) p. 4.

42 Amarjit Kaur, '*Hantu* and Highway: Transport in Sabah 1881–1963', p. 27. By 1934, the area under smallholdings was 23 359 ha. *North Borneo Administrative Report, 1929*, p. 6; *1934*, p. 6.

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44 In 1917 the Chartered Company ended the 1905 tax-free concession of exemption from taxation for 50 years and after 1924 all land was alienated subject to the condition that rubber grown on it would be liable to payment of a royalty. *Handbook of the State of North Borneo, 1934*, p. 69.

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APPENDIX 7.1

Peninsular Malaysia: Population by state and ethnic group, 1957–1991 ('000)

State	Year	Malays	Chinese	Indians	Total*
Johor	1957	445.0	393.0	70.3	927.0
	1970	681.0	504.2	85.8	1 277.2
	1980	898.5	628.9	108.3	1 638.2
	1991	1 063.4	760.2	139.0	2 162.4
Kedah	1957	476.0	143.9	65.2	702.0
	1970	673.7	184.7	81.0	954.9
	1980	802.4	208.4	86.6	1 116.1
	1991	1 008.6	225.3	100.5	1 364.5
Kelantan	1957	463.5	28.8	6.3	506.0
	1970	632.8	38.7	5.8	684.7
	1980	830.0	47.9	6.7	893.8
	1991	2 222.8	54.4	5.9	1 207.7
Melaka	1957	142.9	120.8	23.1	291.0
	1970	209.1	160.3	31.8	404.1
	1980	249.3	176.7	35.6	464.8
	1991	301.8	176.0	37.1	529.2
Negri Sembilan	1957	151.5	150.4	55.7	365.0
	1970	218.0	183.6	77.8	481.5
	1980	265.0	209.7	97.1	573.6
	1991	374.4	211.4	116.7	722.0
Pahang	1957	179.0	108.3	22.6	313.0
	1970	308.1	158.3	36.9	505.0
	1980	532.1	209.6	55.4	798.8
	1991	771.2	199.3	64.0	1 081.1
Penang	1957	164.7	327.2	67.2	572.0
	1970	237.3	436.7	89.7	776.1
	1980	312.5	521.4	109.4	954.6
	1991	422.0	550.6	119.8	1 116.8
Perak	1957	484.7	538.5	177.0	1 221.0
	1970	674.8	666.4	223.5	1 569.1
	1980	808.2	737.2	255.6	1 805.2
	1991	937.2	705.9	268.6	1 974.9

Continued...

Appendix 7.1 continued...

Peninsular Malaysia: Population by state and ethnic group, 1957–1991 ('000)

State	Year	Malays	Chinese	Indians	Total*
Perlis	1957	71.3	15.8	1.5	91.0
	1970	95.7	19.9	2.5	121.1
	1980	116.1	23.8	4.2	148.3
	1991	156.4	23.1	3.6	190.2
Trengganu	1957	256.0	18.1	2.9	278.0
	1970	379.4	22.6	2.8	405.4
	1980	494.9	26.6	2.4	525.2
	1991	754.0	29.2	2.4	808.6
Selangor	1957	291.7	488.3	205.5	1013.0
(Including the	1970	562.2	755.9	298.6	1630.4
Federal Territory	1980	991.0	1 075.0	409.6	2492.6
of Kuala Lumpur)	1991	1 534.9	1 314.0	521.8	3 640.3
Selangor	1980	671.0	567.5	269.4	1 515.5
	1991	1 073.6	757.8	383.6	2 413.6
Kuala Lumpur	1980	320.0	507.5	140.2	977.1
	1991	461.4	556.2	138.2	1 226.7

* Including a small number of persons of 'Other' ethnic groups and for 1991 non-Malaysian citizens

Source: Richard Leete, *Malaysia's Demographic Transition* (Kuala Lumpur: Oxford University Press, 1966) pp. 23–4.

APPENDIX 7.2

Malaysia: Gross Domestic Product by region and industry, 1980–1990
(% of Malaysian total for each year)

Sector	1980			1985			1990 (Plan)		
	Peninsular Malaysia	Sabah	Sarawak	Peninsular Malaysia	Sabah	Sarawak	Peninsular Malaysia	Sabah	Sarawak
1 Agriculture, Forestry, Livestock & Fishing	80.24	11.67	8.09	79.39	12.31	8.30	78.51	12.66	8.83
2 Mining & Quarrying	70.14	13.39	16.47	58.39	16.93	24.68	52.34	20.86	26.80
3 Manufacturing	95.89	1.23	2.88	94.33	1.79	3.88	93.11	2.35	4.55
4 Construction	82.87	7.70	9.44	83.40	7.74	8.86	83.38	7.73	8.90
5 Electricity, Gas & Water	87.66	6.09	6.25	86.54	6.78	6.68	86.38	6.87	6.74
6 Transport, Storage & Communications	88.28	6.92	4.80	88.23	6.47	5.31	88.22	6.46	5.31
7 Wholesale & Retail Trade, Hotels, Restaurants	89.62	5.20	5.18	89.56	5.23	5.20	89.46	5.35	5.20
8 Finance, Insurance, Real Estate & Business Services	89.12	5.99	4.88	88.93	6.01	5.07	88.99	5.99	5.02
9 Government Services	87.95	5.57	6.49	87.91	5.49	6.60	87.91	5.45	6.64
10 Other Services	90.60	4.70	4.70	91.69	4.19	4.12	91.70	4.06	4.24
Total	86.08	7.07	6.85	84.53	7.53	7.94	84.11	7.79	8.10
Population	82.66	7.60	9.73	82.13	8.10	9.77	81.70	8.49	9.81

Source: Fifth Malaysia Plan, 1986 - 1990 (Kuala Lumpur, 1986) pp. 172–5, 190–1.

8 Environment and Ecotourism

The Case of the Orang-Utan

Gisela Kaplan
University of New England

This chapter examines Malaysia's impressive economic record over the past decade and focusses on the timber industry and ecotourism as two incompatible economic activities in East Malaysia. These activities, introduced into culturally and ecologically fragile areas, raise broad questions about sustainable tourism and sustainable ecology.

The Centre for Rehabilitation of Orang-Utans will be used as an example to highlight the consequences for local fauna and indigenous people. It is argued that the East Malaysian states represent politically a distant outpost but one that has been discovered as marketable. Sabah and Sarawak are marketed aggressively as frontier regions (last paradise imagery) and as adventures off the beaten track, suggesting a mass market rather than a fringe. Discovering 'paradise' at the very time at which it is so very nearly lost belongs to the contradictions of development and symbolises the environmental tragedies of the 20th century.

THE MALAYSIAN ECONOMY AT A GLANCE

Malaysia belongs to a group of Southeast Asian countries that have seen unprecedented economic growth in the last three decades, accompanied by a population explosion partly through better medical care, a reduction in infant deaths and a better standard of living (see Appendix 8.1). The health of Malaysians is improving and some of the changes have been dramatic indeed. If one can believe the measures of poverty, given that there are many remote rural areas, the overall incidence of acute poverty on Peninsula Malaysia has declined from nearly 50 per cent in 1970 to 15 per cent in 1990. In parts of West Malaysia, the standard of living has gone up drastically, often five to tenfold, as measured by the number of television sets, telephones and motorcars, although all these indices are still very low (see Appendix 8.1). Overall, by 1990 Malaysia had substantially improved its position in the region and well exceeded GDP values of any developing country around the world, as well as most of eastern Europe (see Appendix 8.2).

While the economy as a whole has experienced structural change, with the manufacturing sector overtaking the primary producing sector (see Chapters 7 and 9), two of the most important natural resources are petroleum and timber. The economy of the East Malaysian states of Sabah and Sarawak is less diversified that the West Malaysian economy and petroleum and timber are the main growth areas in these states. Revenues from petroleum have largely been syphoned off to West Malaysia and the expansion in timber exports has resulted in the timber resources being rapidly depleted (see Chapter 7). Partly because of the loss of petroleum revenue due to federal government rights to claim offshore income, Sarawak and Sabah have remained the poorest states in the federation. In such contexts of less developed regions, tourism takes on rapacious forms and offers specific problems.[1]

Logging of the Forest

The timber industry and the export of forest products have always played a significant role in Malaysia's economy, none more so than in East Malaysia. But over this century, the role of the forest and the extent to which it was thought to be a source of instant wealth, has shifted significantly. In the late 19th and early 20th centuries, there was some emphasis placed on forest products. These included products such as guttas, rattans, canes, india rubber, birds' nests, beeswax, ivory, skins, and nipah sugar. At the time when Sabah was still British North Borneo, timber constituted no more than 50 per cent of forest products.[2]

The fate of East Malaysian timber was sealed in the 1950s and 1960s. During the colonial period (1946–1963), timber concessionaires were allowed to enter the East Malaysian logging market, and soon after Malaysia was formed, the timber industry became part of a national development strategy. The gradual and then sharp increase in the volume of timber exports owed as much to political action and the rising number of concessionaires as to the changes in the use of machinery. From the early 1960s on, reliable heavy machinery for road-making and log-hauling was used in conjunction with the new one-man chainsaw which enabled a reduction of time in felling from half a day to a few minutes.[3] Today, Malaysia is the world's biggest exporter of tropical timber.[4]

Affairs pertaining to forests and local flora and fauna are the exclusive responsibility of local state governments in Sabah and Sarawak. The Sabah Foundation alone owns 36 per cent of Sabah's remaining 'commercial' forest. In Sarawak, two very senior government officials, have, at one time or another, between them controlled 2.9 million hectares of logging concessions.[5]

Logging is big business for as long as the forests last. The crucial

period for the stepping up of timber exports are the years between 1975 and 1980. In that period, forest revenue in Sabah alone increased tenfold from M$152m to over one billion Malaysian ringgit.[6] This new plateau of exports was never abandoned and the quickened pace of timber exploitation has set the scene for what is believed to be the irreversible disappearance of the rainforest within our lifetime (see Appendix 8.3). Yet the Sarawak Timber Industry Development Corporation seriously suggested at one point that the destruction of rainforest was due to illegal immigrants, 300 families in all, who practised shifting cultivation and had destroyed the forest.[7,8] In the late 1980s, Sarawak and Sabah exported annually about 12 million cubic metres of timber each, with Sarawak overtaking Sabah's production by 1984.

It has been said that in the logging boom of the 1970s and 1980s, there were more millionaires per square metre in Sandakan than anywhere else in the world.[9] In 1979, forest revenue accounted for 77 per cent of the total state revenue of Sabah. Copper and petroleum amounted to less than a tenth of forest revenue (just six per cent of total revenue), not because of a lack of income in this field but because the federal government of West Malaysia collects nearly 95 per cent of mineral resource revenue. If the federal government were to renegotiate a more favourable deal with the East Malaysian states concerning petroleum, Sabah and Sarawak would not need to use their forests as the main form of revenue.[6]

Many of the states' logging activities are linked with giant Japanese and some Korean companies who have obtained the right to log from local governments. So deep is Japan's involvement that in 1987 it had repercussions in Japan itself. A scandal broke out when it was discovered that 200m yen of foreign aid funds had been given to the Limbang Trading Company in Sarawak for the building of logging roads.[5] Each day, 850 hectares are being cleared in Sarawak alone. Even the International Timber Trade Organisation (ITTO) agreed that no primary forest will be left in Sarawak by the year 2000. Of Sabah's 7.3m hectares of land mass, a total of 4.7 million hectares were under forest cover in 1989. Four per cent of this consisted of mangrove, two and a quarter per cent of transitional, beach and swamp forest, nearly ten per cent are montane forests and nearly a quarter were immature, disturbed and regenerating forests. Only seventeen per cent consisted of undisturbed low and highland dipterocarp forests.[10] In Sarawak's forested areas peat swamp and dipterocarp dominate.[11] Shallow peat swamp (27 per cent of cover) is also found on the south-western side of the island of Borneo, in the area of Tanjung Puting.[12] The rapacious exploitation of local rainforest (for the cost of a lease and very little local employment) has incensed local populations, particularly the Penan and the Dayaks who have seen their forest, and livelihood, being bulldozed down. Within the Baram and Limbang districts of Sarawak the Penan, Kayan and Kelabit protested bitterly throughout 1987 in a series of logging blockades staged by local

environmentalists and activists. Their forest which had always provided their livelihood, was under threat and with it their own lifestyle and future. Human protest has made no difference to the ongoing deforestation of either state.

Tourism

Tourism, until the early 1980s, remained an almost untapped income resource. While Hong Kong, Singapore and Thailand ranked amongst the top 15 tourism earners worldwide in 1991, Malaysia failed to feature in this list.[13] Malaysia has since considerably improved its position in this respect. The campaign 'Visit Malaysia Year' in 1990 increased visitors by over 50 per cent in one year alone, rising to 7.4 million visitors in the following year and maintaining a rising tourist profile ever since.[13]

By the early 1990s, Malaysia had become the best equipped country to deal with large tourist demand in the region. A good measure of such tourism orientation (although not the only measure) is the number of hotel rooms that are available. Indeed, Malaysia boasted the greatest number of hotel rooms of any of the leading Southeast Asian tourist destinations (see Table 8.1), a profile that Malaysia has maintained until now.

Table 8.1 Hotel rooms in Malaysia and the region, 1991/95

Country	Existing Hotel Rooms in 1991	Expansion of Hotel Rooms to 1995	Total by mid 1990s
Malaysia	45 453	1 654	47 107
Thailand	19 523	21 985	41 508
Indonesia	34 971	4 905	39 876
City			
Hong Kong	27 231	36 572	63 803
Beijing	15 925	16 142	32 067

Source: Adapted from: Schlentrich and Ng, 1994.[13]

Hong Kong's enormous expansion of hotel accommodation, as shown in Table 8.1 above, is rather difficult to understand, given that Hong Kong's return to China was due to occur in mid 1997. As a common saying goes 'Hong Kong catches a cold when China sneezes'. However, hotel leases in Hong Kong were open to renewal after 1997 for a further 50 years.

Amongst the world class hotel chains in Malaysia are the Hyatt, Marriott, Westin, Sheraton, Mandarin Oriental and Nikko. Room occupancy at an average rate of 72 per cent has also encouraged foreign investment. One of the reasons why Malaysia has been able to attract substantial foreign investment and hotel building activity from international hotel consortiums is likely to be related to its laws on foreign ownership. Malaysian rules are relatively generous. As in Hong Kong (at least until mid 1997) and partly in Singapore (residential property excluded) there are no restrictions on foreign ownership. Although Malaysia does not permit freehold ownership of real estate, its leases are generous (66 or 99 years). Unlike Indonesia, the Philippines and Thailand, where even ownership of leases is restricted to under 50 per cent of foreign ownership, Malaysia permits full foreign lease ownership. Although the growth rate in past years has not been overwhelming (3.7 per cent), facilities in all tourist spots have been upgraded and modernised, often beyond recognition.

Tourism in Malaysia now covers a wide range of offers and activities. Marketing spans the broad range of internationally identified reasons for tourism such as beaches, cities, culture, festivals, markets and the like. A relatively new branch of tourism worldwide is ecotourism which appeals to a very specific market. Malaysia is one of the few countries in the world that has developed ecotourism on a large scale.

IMPACT OF ECONOMIC ACTIVITY

Logging and its Impact on Flora and Fauna

The World Resource Institute has established that, in the 1990s, rainforests worldwide are being decimated at the rate of 100 000 square kilometres per year. In Sabah and Sarawak the Bornean rainforest may disappear almost entirely by the turn of this century. There are reforestation and afforestation programmes in Sarawak and Sabah, but these tend to suffer from a lack of diversity and a possibly futile race against time. Forests are being cut at a faster (and accelerating) rate than new trees can grow.

There still exist some serious misconceptions about the nature of rainforests in the tropics. It is often believed that the lushness of the rainforest indicates fertility of the soil and a fast rate of growth. Quite contrary to these impressions, the soil on Borneo and on most tropical islands in the region is extremely poor and rates of growth are mostly excessively slow. Irregularity, even an erratic cycle of flowering and fruiting, is a characteristic of the tropical rainforest and one of the reasons why frugivorous species such as orang-utan need to forage over large

terrains. The lack of regularity in flowering and sparse dispersal of each particular species of plant is compensated for by an enormous variety of species but such variety itself is under threat even in areas that are committed to reforestation programmes.

Pearce called the concept of sustainable forestry a 'policy of wishful thinking'.[8] Sustainable forestry implies that the original resource is treated as non-renewable and that its ability to be renewed can be orchestrated through human planning. One strategy employed widely is replanting. Replanting guarantees that there is replacement and, in the best scenario, will include some of the species that have been felled. However, nowhere has it yet been possible to recreate the same variety and conditions of the forest as found before logging. Organic growth follows a number of sophisticated and complicated ground rules and the rainforest is the most complex of all forests both in its erratic, irregular, and diversified existence. There is also the time factor: regrowth may be positive but there are species which may need 200 years to regain their full height and at least 60 years to gain sexual maturity. The gap between removal of forest and even partial replenishment can exceed several generations and with continued logging such a gap between clearance and regrowth would consequently widen.

Today, sustainable forestry is rather confined to a different strategy called 'selective' logging, which has become a catchword in the logging industry worldwide. Selective logging implies that forests are a non-renewable resource and therefore can be tapped only selectively to retain the bulk of the forest for continued use later. Roughly, this means that only ten trees per hectare are being harvested at any given time. This sounds indeed cautious and reasonable. However, the trees are not being lifted out by helicopters. Roads need to be cut through forests in order to obtain the ten trees. In the process of selective cutting, many other trees are torn down. Indeed, for every ten trees harvested, another 70 are damaged or killed, amounting to about 40 per cent of clearing of one particular forest patch.

Logging also adversely affects plants that are not harvested but are important for local fauna, particularly the orang-utan and other vertebrates such as birds. One detrimental effect of logging can be seen for instance in the density of figs. A study found that in selectively logged forest, adult and juvenile figs were less common than in primary forest.[14] The reason for this is that mature figs occur disproportionately in large trees and are particularly prevalent in dipterocarpaceae and *Eusideroxylon*, the major commercial timber trees.[14] Hence, even low intensity selective logging drastically alters the density of fig trees and reduces the sightings of several frugivores, including hornbills (*Rhyticeros*) and orang-utans (*Pongo pygmaeus*).

Many problems of logging become visible only in the long term. There are problems of soil compaction, erosion, loss of nutrients and

increased exposure. But this type of damage due to extensive logging has been well understood for some time. It is less well known that forests regenerating after timber exploitation are not expected to achieve the height of the original forest. The rainforest is organised in three horizontal layers, canopy, undercover and ground growth (see also Chapter 4). This three-dimensional organisation of rainforest owes much to the monolayered foliage, 'crown-shy' habit, and prolonged juvenile development of trees of the upper canopy. The height reduction of regenerating forests may be as much as 25–50 per cent, thereby significantly reducing horizontal living space (volume) of the forest by an equivalent amount.[15] Such loss of living space concerns particularly species who are at home in the canopy, amongst them the orang-utan.

Another long term problem concerns the way in which regeneration can take place. Regeneration is dependent on many factors, not the least of which is the way in which seeds are transported to new growth sites and the conditions required under which they may germinate. Transport, that is, the spreading of seeds on behalf of the plants, is taken over by animals for a number of species, particularly fruiting trees. Hornbills and orang-utans fulfill this role while squirrels eat the seed rather than help in their dispersal. Hence, if orang-utans are driven from a terrain as a canopy species and replaced by less demanding lower canopy species, such as squirrels, trees lose their germination agents and eventually disappear from the area.

Conditions for germination also include humidity as an important factor. Clearing affects humidity and many species are humidity-dependent for their germination. Loss of humidity because of clearing therefore alters the course of regeneration,[15] slowing it down and leading to the successful germination of a select number of species only. Diversity is thereby reduced and the extinction of plant species is facilitated.

Then there is the question of size of reserves, parks and selectively logged areas. Loss of horizontal forest space through reduced canopy volume in regenerated forests is further confounded by shrinking forest area. Most undisturbed forest reserves are already too small to be self-sustaining, meaning that the fauna in it is reduced and not self-perpetuating. However, depletion of certain species of vertebrates (such as birds and apes) affects the ability for regeneration and the viscious cycle is complete.

Although we know these processes well, we do, in fact, understand far too little about rainforests and about the insects and plants, many of which have not even been categorised and named as yet. Due to our limited understanding to date, it is in fact very difficult to estimate a reasonable size for sustained regeneration of forest and genetically self-perpetuating species within its confines.

The problem is that representation of an animal species does not increase proportionately with area although this may be true for the total

number of trees.[15] A classic study by Poore[16] examined the species of the upper canopy in a 23 hectare study area of lowland forest. Of the 377 species he found, 81 per cent were represented by only one to ten mature individuals each and 38 per cent (143 species) were represented by only a single mature individual. The latter finding is of interest for orang-utans in particular, although Poore's study site did not include orang-utans. The orang-utan is an upper canopy species. As it dwells in the canopy and is the largest mammal to be found in this layer of forest, it is also affected most by logging even within fully regenerated forests precisely because they have lost in volume and height the horizontal layer that they occupy. As a relatively solitary species, orang-utans tend to congregate in groups only in favourite fruit trees and are otherwise dispersed either as individuals or in mother-infant groups of two or three. Their dispersal patterns and semi-nomadic life style thus require large areas of available rainforest through which to travel for food and reproduction. The same is also true of the original inhabitants. Many forest peoples, such as the Penan, were semi-nomadic, following the fruiting and hunting trails. They too lose their livelihood. In the last twenty years or more, tropical rainforests have been in crisis.[17]

Logging creates refugees with nowhere to go. There persists, even today, a sense of reassured calm that selective logging is a form of resource management based on sustainability. Most governments with high density virgin rainforest have consented to map out reserves before an area gets logged. Some of these may be extremely small, others are 50 or 100 hectares or even larger. Sepilok, for instance is 10 000 hectares. However, these patches and island refuges for native plant and animal species are ultimately cosmetic procedures that will neither halt, let alone reverse, the current rate of destruction. Without easy passage for animals from one to the next protected region, separated now by gulfs of human development, species diversity and genetic diversity within one species cannot be maintained. There have been countless studies over the last two decades, showing that the isolation of reserves one from another and their relative size causes a sharp rise in fleeing animals and within a six month period a sharp decline of the number of species found in the reserves.[18]

Fragmented Populations of Orang-utans

Fragmentation of the forest environment inevitably leads also to the fragmentation of the fauna. The reproductive response by orang-utans is particularly telling and a powerful example of how the disturbance or disappearance of large areas of rainforest impact on one species alone. If too many orang-utans are forced into one specific area because of logging or agricultural developments, orang-utans may appear to condone and adapt to the new conditions. However, it is adaptation at a price. In areas

considered crowded by orang-utans, they slow down or even stop reproducing. Hence they respond by self-culling their own numbers, thereby hastening their own demise.

In an ironic twist, the destructive spiral of logging can eventually make animal species party to the destruction of the forest. When the lush forest has been turned into an ecologically fragile and confined environment, the original human and animal inhabitants suddenly help in its destruction merely by continuing in the lifestyle that may have sustained them and the forest for untold centuries before. The same species that were once helping the forest to be maintained can hasten the extinction or death of individual plant species when confined to areas that are too small for them. Orang-utans wreak havoc on trees when they remain in the same area for too long. They take branches for nest building, play and for food and eventually strip and ringbark trees completely. Spread over a large area, these habits result in tree pruning and have no detrimental effect but in a small area the devastation becomes quickly visible, as is visible in Sepilok (of this later). This destruction in turn aids their own destruction because it limits sustainable living space even further.

The risk of genetic erosion has now been discussed for some years. A working party found that a genetically safe population size of orang-utans should be no less than a minimum population of 10 000 'to ensure the long-term survival of the species'.[19] Yet in reserves, as in the Gunung Leuser National Park of 8527 square kilometres the organ-utan population numbers just about 5800,[19] hence with a density of about 0.7 orang-utans per 1 square kilometre is well under the 'genetically safe' population size. Relevant bodies have established that the total area of orang-utan habitat on Borneo is about 22 360 square kilometres with a population minimum estimate of 10 282 and a maximum of 15 546,[19] hence a density of 0.5–0.7 orang-utans per square kilometre. Because of the fragmentation of the populations, it follows that nowhere do orang-utans today live within the estimated 'genetically safe' size. They are all at risk.

Of the 30–40 species of apes which flourished 15 million years ago only five remain today: the chimpanzee, gorilla, gibbon, orang-utan and humans. Orang-utan remains in caves in Vietnam[20] tell the sad story of the steady decline of this magnificent ape (see Chapter 4). In 1993, the Working Group on Orang-utans, a specialist group consisting of members of the Indonesian Forest Protection and Nature Conservation and of the United Nations body of the IUCN/SSC Captive Breeding Specialist Group, compiled a report, called 'Orang-utan: Population and Habitat Viability Analysis Report,' and made the following general recommendations:

1) The major threat to the orang-utan population level is the loss of adult females and the low rate of population increase which is natural for this species.

2) Given the life history of orang-utans, continuous vigilance and strengthened enforcement of existing laws is required to protect existing populations because they are unable to withstand significant levels of removal through poaching.
3) The major threat to orang-utans is habitat loss as well as degradation and fragmentation, especially in lowland forest.[19]

THE CONTRADICTIONS OF ECOTOURISM

Like logging, tourism is a major economic activity in Malaysia. In the period from the late 1980s to the mid 1990s, the Malaysian government undertook a large scale and even aggressive tourism promotion drive. In the 1970s, environmental protection agencies had sprung up everywhere and options for a sustainable future of forests as a non-renewable resource were discussed worldwide. Resource conservation became a significant component in tourism in the late 1980s[21] and the perceived urgency resulted in better dissemination of information in areas affected by wilderness visitors all around the world.[22,23] Environmental impact assessments began to make their entry faltingly and often faultily into policies guiding new economic activity.[24,25] However, within the business world 'sustainability' was soon taken over as a term and was used as a means to allay fears of economic activities which could be seen to work against maintenance of the status quo. In tourism, the argument was gradually shifted from 'protection' to cautious 'exploration' because tourism that promoted itself as environmentally conscious tourism became highly marketable. Ecotourism became the exploitation of a new market niche.

Ecotourism is meant to be unlike other branches of tourism and is built on several specific assumptions. Ecotourism is perceived to be a sustainable 'two-way track'.[26] The ecological argument is usually couched in the framework of benefits as a safe means for biodiversity conservation in the face of population growth and other profit-making alternatives for areas of high conservation value. First, ecotourism promises a site for inspection that has intrinsic value as a natural feature. Flora and fauna become the focus of attention. Second, the site is recognised as precious either because of special physical features of the landscape itself and/or because of unusual or very diversified flora and fauna. Third, ecotourism suggests a minimum of human interference in the natural environment and a maximum of immersion in the natural environment for the prospective visitor. Tourist accommodation tends to be more 'rustic' and facilities are often just up-market camping style facilities. Fourth, ecotourism is said to hold benefits for the environment by providing the funds to maintain it or even improve it (for example, by reforestation, breeding or rehabilitation programmes). Finally, ecotourism implies that

the organisers are not only aware of the special value of the natural site but have taken active steps to protect it.

The lines of what constitutes ecotourism as opposed to mainstream tourism can get rather blurred, but the assumption is that ecotourism is not mainstream mass market tourism. An example of managed ecotourism might be the Galapagos Islands. Some of the islands cannot be visited and many of them have definitive restrictions on the number of people allowed on the island at any given time. The restriction may be forty people, provided they have a guide who takes responsibility for supervising visitors to stay on specified paths and generally behave in a manner that will not inflict damage on the environment. Skiing in Austria, on the other hand, would barely be regarded as ecotourism, even though the landscape is a major feature.

Malaysia has chosen the orang-utan as its mascot, although the orang-utan is not unique to Malaysia but occurs also on the Indonesian side of Borneo and in Sumatra. This strategy of marketing the uniqueness of Malaysia via the orang-utan has very obviously worked. It seems to have become chic in the western world to have seen or become acquainted with orang-utans in person. There is barely a travel catalogue or newspaper in European countries, in Australia or the USA which does not feature a photo of orang-utans or passes comment on orang-utans at some time or another. Orang-utans have even trickled down to news and gossip columns in rural Australia[27] and Sepilok is the most often mentioned site for special experiences replacing an imagery of paradise with that of innocence and cutesy human-like images of baby orang-utans. Orang-utans these days are referred to as 'gentle giants'[28] and comments confirm, in typical anthropomorphic style, that they are not all too different from us, making it 'hard to believe we were watching baby orang-utans and not humans'.[29] When I jointly published a book on orang-utans in 1994, entitled *Orang-Utans in Borneo*,[30] the popular media showed unexpected keenness to report on it. This was just at the beginning of the orang-utan craze. Belated as this interest in orang-utans has been, it cannot be divorced from the Malaysian marketing drive to boost tourism.

As Table 8.2 shows, the final success of tourism promotion is to achieve worldwide integration of holiday goals into the global tourist destination brochures (level 2 of Stage III in Table 8.2). When this is achieved, invariably the national income from tourism becomes substantial. However, the stream of millions of visitors also makes locals feel that this is on invasion beyond their control. In a sense, a country or tourist locality locked into the mass market becomes permanently or seasonally rented out to the highest bidders.

Table 8.2 The development of the Ecotourist Model

Stage of Development of Tourism	Economic Impact	Tourist Type	Tourism	Emotional Impact on Host	Social/ Environmental Impact
STAGE I	minimal	explorer/elite	limited promotion	euphoric	minimal
STAGE II	moderate	unusual	off the beaten track	apathy	moderate
STAGE III level 1	substantial	mass market	highly promoted	annoyance	important
STAGE III level 2	substantial	mass charter at high volume	worldwide integration into tour programs	antagonism	substantial

Source: Adapted from Singh and Kaur (1982).[31]

The development of ecotourism generally follows a slightly different route, at least at first, than mass market tourism. 'True' ecotourism is meant to hold human impact to a minimum and therefore deal in relatively small numbers. As Table 8.2 indicates, ecotourism would therefore also retain characteristics of a small business enterprise. Although it provides employment opportunities and feeds local profits and business outlets, its overall impact on the nation's economy remains small. In Malaysia, however, the development of tourism is tied to the environment. The ticket on which Malaysia was able to successfully enter the world-competitive market of tourism was its distinctiveness in flora and fauna. Marketing strategies designed to capture worldwide clientele are in sharp contrast to the stated aim of limiting human impact.

Travel brochures advertise Borneo according to a reliable marketing tool. They invariably show photos of three things: 'natives' usually portrayed in full ceremonial outfit; orang-utans, usually baby ones; and one or two scenes of undisturbed virgin rivers and forest. These images are designed to conjure up romanticised ideas of explorers of times long gone by, of the first whites in the centres of Africa, South America and Borneo, the anthropologists who lived amongst native tribes, the geologists and biologists who braved the uncharted rivers and mountains. They are meant to convey the unusual (orang-utan), the indigenous (people), the desirable (wilderness) and bring into reach what had existed reasonably unmolested for thousands of years precisely because it was rather inaccessible.

In nineteenth century Europe, great game-hunting and anthropological interest in human ancestors brought adventurers, hunters and scientists to Borneo in several large-scale operations and countless smaller ones. British North Borneo (Sabah) offered the starting point for exploration. It is in the nineteenth century that the demise of orang-utans began. Hundreds of adult orang-utans were killed and shipped back to Europe to be studied and their bones housed in various museums.[32] Writing about these visits created a romantic imagery of wild exciting places that have been passed on from generation to generation. It only took relatively little entrepreneurial ability to see that making a cultural metaphor of 'wildness' and 'wilderness' accessible would be extremely successful.

All marketing of East Malaysian tourist spots, except for Mt Kinabalu and Kota Kinabalu, is done under the conceptual umbrella of Stage II of tourism development (see Table 8.2). Indeed, the market niche that has opened for these provinces, is based largely on the claim that travel offers off-the-beaten track sites and experiences.[33] For a very rich western world, forever out to explore new destinations and sample new experiences, off the-beaten-track travel became widely popular and drew forever wider circles. There is barely a leading travel agency in Europe or the USA which will not now offer the 'experience of a lifetime' in Malaysian Borneo. Travel has become relatively cheap and affordable.

By definition, the environmental impact must be different for cities

than for tourist spots which have become marketable for their natural beauty and specific leisure potential. Ecotourism works on the premise that the tourist will see something precious or extraordinary in nature. The discourse built around such premise is invariably associated with ideas of travel 'off the beaten track', or Stage I or II of the development of tourism (see Table 8.2).

The promise of a special experience is also related to the number of other human visitors to the area. And here a dilemma arises between the advertised 'goods' and the strategies used to sell them. In practice, much of what sells as ecotourism ultimately moves through the same stages that characterise mass tourism. There is no doubt, that tourism on a large scale does have an impact on the physical environment.[34] Negative impact occurs especially in environments that are fragile. In the case of East Malaysia that negative impact is magnified by another chief economic activity, logging. Here, both economic activities ultimately work against each other. Inevitably, contradictions arise between development and conservation.[35] In these processes of a commodification of culture and of nature, it is the latter that raises the most tantalising problems, although these are not always recognised or admitted.

To give an example. In the late 1980s, we visited the Sepilok Orang Utan Rehabilitation Station near Sandakan. Over an entire day, we saw at most, about 20 other visitors whom we passed and did not see again. The few visitors disappeared in the park and remained an insignificant element of the local forest experience for the individual visitor. Few restrictions were in place. The buildings (holding cages for sick or injured animals, offices, laboratories) were old but functional. We ate lunch with the local employees, a lunch that was served simply and unceremoniously. A station employee took us through some forest walks and guided our way and then left us. Orang-utans, young and old, wandered through the forest and crossed our path regularly. On our first visit to the Centre we personally interacted with or saw at close range about thirty orang-utans. A group of young orang-utans chose us as playmates. The noises of the forest, deafening as the cicadas are, were confined to natural ones. We were alone long enough with the orang-utans and in the forest to feel immersed in a new experience, to feel at leisure the enchantment of the unusual encounters we had. We stayed on the path we were asked to follow. The meetings with orang-utans were uncomplicated, spontaneous and they were initiated by the orang-utans, not by us. The experience had elements of novelty and excitement which the explorers might have felt in new terrain and it was clearly one that fell into the precincts of 'off-the-beaten track' travel.

Here lie the obvious contradictions: Such experiences hold tremendous attraction to others once told, and they will then want to do the same. However, the experience works only when human invasion is held in check and individuals can be alone to be engulfed by the sounds and sights

of the jungle. Often tourist companies include a one hour stop at a rehabilitation centre. Having larger groups and more of them at the same time, makes the individuals in the groups unable to divorce themselves from the travel/tourist experience and turn their attention to the sight they have actually come to see. The most notable features of these brief visiting groups are two things: they speak loudly and they speak to each other about mundane things of travelling such as their last hotel accommodation often hundreds of kilometers away, their meals, their camera equipment. Rarely will they comment on what they see or ask questions actually related to the rainforest or to the orang-utans they thought they wanted to meet.

Today, the crowds milling around orang-utan centres in Borneo and Sumatra would be the envy of any zoo, replicating as they now do, pedestrian traffic in New York rather than a quiet jungle outpost. However, psychologically, the direct and comfortable transfer from the living rooms in western cities by plane directly into a Southeast Asian jungle is unworkable. For instance, many German tours offer just one week excursions from Frankfurt directly to Kuching or Kota Kinabalu. On the second day of their trip, a visit to an orang-utan rehabilitation centre is common. People are often tired from the change of time, the overwhelming change of climate and of their surroundings. They are disorientated but cannot wait to see the 'unusual'. Acclimatisation is impossible, either climatically or psychologically. Further, the experience they seek is lost entirely in the bustle of hundreds of people strolling along a fenced path into small viewing area platforms. One woman exclaimed: this is exactly as in Holland. In a way, she was correct: the people, the fencing, the guided round-trip are all the more reminiscent of regular zoos and wildlife parks than of the Bornean rainforest. Since the Dutch woman was unlikely to have experience in tropical rainforests, she could not tell that it signified something that was substantially different from her zoo experience in Holland. Zoos now have built masterly enclosures based on a make-believe reproduction of the original environment of a species.

In other words, marketing may be for Stage II but the reality is that, within a few years, (1990–1995), the target of worldwide advertising, the screening of documentaries, reports and stories of orang-utans (our own project included) led to an assailing of these wilderness and rehabilitation areas in such proportions that they are aptly described as an invasion of the masses. Charter flights and tours now operate regularly to Sabah and Sarawak, moving large volumes of people.

The income derived from rising tourism is substantial, but is this ecotourism and is it sustainable?

First, one needs to acknowledge that not all parks have opened to tourists and translocation of orang-utans has now also occurred to wilderness areas where wild orang-utan populations no longer exist.

Information on Malaysia's National Parks and Reserves is now available on the Internet through the Malaysian Tourism Promotion Board, detailing not only important information about the parks but how to get there and what tourist facilities are on offer. In Sabah, the Kinabalu National Park, Niah National Park, the Tunku Abdul Rahman National Park (five islands), the Gunung Mulu National Park (caves), and the Sepilok Rehabilitation Centre are high tourist spots but the Tabin Wildlife Reserve and the Tawau Hills National Park are still off the beaten track and the Danum Valley is well visited but largely by researchers. In Sarawak, Semengoh Rehabilitation Centre and Bako National Park have been opened to tourism[36] but large tracts of Sarawak have so far remained inaccessible to the tourist industry.

Discussions in the last five to ten years have focussed on a manageable interaction between human activity, mainly selective logging, and species maintenance. For instance, some species are more tolerant to logging than others,[37] but it appears from the evidence collected so far that the orang-utan is one of the less tolerant species. There is relatively little material on how much primary forest is needed to sustain a population and how much in selectively logged areas. Orang-utan density seems to vary with habitat and fruiting seasons. Sepilok was already deemed too small an area to sustain the then existing orang-utan population in 1986, but the Centre continued to take in orang-utans.[38] To my knowledge, there is no natural corridor to the remaining and relatively close areas which still had healthy orang-utan populations some time ago, such as some of the hinterland of Sepilok and in the Sukau area across the bay along the Kinabatangan river. Where orang-utans are not barred from travel by the sea or by mangrove swamps they are barred through human population and agriculture.

Human activity is equally detrimental to wildlife if this requires the wholesale clearing of land, followed by monoculture plantations. But relatively little is known of the effect of tourism on wildlife species. There are gains as well but probably the losses will be greater in the future than the gains in the short term. It is often cited that ecotourism has its virtues. Select areas may have their flora and fauna preserved which otherwise might have succumbed to civilisation pressures (growing human population) and profit-seeking companies (largely logging but also mining). Some national parks and wildlife reserves are secured by the income they now generate.[39] Orang-utans living in these tourist sites are secure from poaching and from other risks of encroaching human populations. They will not get hunted down, electrocuted, held as pets or be deprived of food when the rest of the forest is 'harvested'. At first, at least in Sepilok, there were no charges to the public, but this has now changed. In the majority of rehabilitation centres orang-utans have begun to earn their keep – at a cost.

Indeed, there are high costs, both to the actual purpose of a

rehabilitation centre and to the orang-utans or any other species involved in rehabilitation programmes. The cost of rehabilitation centres is two-fold. The diversion from the original purpose (rehabilitation) to that of a tourist industry requires structural changes in the environment. Roads need to be built, parking areas created, toilet facilities, souvenir shops and eating venues have to be erected. To achieve this end, rainforest has to be felled to make room for these new building needs. In order to retain some control of the crowds in an environment reserved for orang-utan rehabilitation, walkways have to be built, some with fences, and viewing platforms. The orang-utans need to be present when tourists arrive. The latter is easily achievable by placing the food platform for the orang-utans near the fixed viewing platform for human visitors. However, orang-utans kept permanently in one forest area do substantial damage to trees, turning the once lush rainforest into a demolition site. The evidence is overwhelming that this fixed arrangement is not very good for the forest or for the orang-utans.

What does this do to orang-utans? How is this different from zoos? Clearly, the area in rehabilitation centres such as Sepilok is larger than in zoos or wildlife reserves and therefore a distinct advantage. A second advantage is that orang-utans are at least in their natural habitat and climate zone and can maintain a semblance of their culture and knowledge required for independent survival. However, anyone who has had anything to do with rehabilitation programmes of any species, knows full-well that extensive habituation to human company makes the species or individual so treated, unreleasable in future. Familiarity with humans at close range and in large numbers is not a receipe for their independence, meaning a life style *apart* from human beings. Complaints about orang-utans invading agricultural areas have increased, not just because orang-utans find fewer places to go than thirty years ago but because so many of them have habituated to the extent that the nearness of humans is no longer a deterrant.

There is possibly also a psychological problem which might have long-ranging consequences on orang-utans. We have found in our studies that orang-utans avoid direct eye contact and have suggested that the direct staring at orang-utans by a never ending stream of people may be very stressful for orang-utans.[40,41] Orang-utans are exceptionally quiet as a species, unlike all other great apes. In the absence of any detailed studies, one can only surmise that the constant noise and presence of large numbers of people is stressful for the orang-utans and may lead to ill health and even death. It may even be possible that the survival rate of orang-utans in some rehabilitation centres is no better than that in zoos. Given the fragmentation of orang-utan populations in Borneo today as a result of logging, it is very difficult to be overly optimistic about their future in the natural environment. It is also questionable how much rehabilitation centres can do to reverse the trend of the sharp decline of

orang-utans, particularly when they are folded into the tourist industry.

As Balong said bitterly about the vanishing wildlife:

> Many of the species that survive this wave of extinction will be quasi-domesticated residents of wildlife reserves, where the ecosystem will be controlled by humans rather than by the traditional interaction among animals, plants and earth. Others will be captive, living the artificial twilight zone of zoos. Their original wildernesses will be reproduced as tiny enclaves landscaped by foam rocks and bounded by walls of iron. Their 'home-range' will be surrounded by human dwellings of fast-food franchises.[42]

In 1990, there were 300 orang-utans held in captivity in North America: 123 of the Sumatran subspecies, 89 Bornean and the remainder subspecific hybrids.[43] Very few primate centres breed for the purpose of reintroduction of animals into the wild.[44] Their environments in laboratories is such that they would perish almost immediately if they were to be released back into the wild. That is also true of zoo environments even though these claim to be 'enriched'. In either environment, animals are deprived of their main activity of searching for food and of their main knowledge systems, including food recognition, predator recognition, and area recognition. Further, the knowledge of some or many of the social and cultural rules will fall by the wayside and therefore ill-equip the animal to deal even with its own conspecifics after release.

The home of orang-utans in Borneo and Sumatra is their only home. They represent the very precious diversity of species and symbolise the number of rare and endangered species in the vanishing tropical rainforests of Southeast Asia. The world now knows about their demise and the world responds largely by taking up the offer to take a last glimpse of this tropical paradise before it disappears. Discovering 'paradise' at the very time at which it is so very nearly lost belongs to the contradictions of development and symbolises the environmental tragedies of the twentieth century.

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APPENDIX 8.1

Malaysia: Structural data, 1960–1990

Year	1960	1970	1982	1990
population (in million)	6.9	10.70	14.4	16.10
population growth (in %)	3.6	2.80	2.7	2.70
urban population	25.0	28.00	30.0	38.00
employed in rural sector	62.0	60.00	51.0	
employed in industry	23.0	25.00	33.0	
illiteracy (%)	47.0	45.00	40.0	20.00
life expectancy (years)				
female		65.50		73.50
male		61.60		69.00
birth rate (per 100 population)		3.24		2.71
infant mortality (% of 100 life births)		3.94		1.35
death rate (per 100 population)		0.67		0.47

Source: *The Second Outline Perspective Plan 1991–2000* (Kuala Lumpur: National Printing Department, 1991), excerpts, especially pp. 44–6.

APPENDIX 8.2

Malaysia: Comparison of National Income by per capita GDP values, 1990 ($)

Singapore	11 160	Philippines	730
Brunei	9 600	Indonesia	570
Taiwan	8 026	Vietnam	215
Korea/South	6 265	Myanmar(Burma)	250
Malaysia	2 320	Laos	200
Thailand	1 420	Cambodia	130
Korea/North	1 240		

Source: Harenberg, 1994.[45]

APPENDIX 8.3

Sabah: Volume and value of timber exports, 1959–1987

Type of Product	YEAR 1959	1969	1979	1987
Plywood Volume (M^3)	NIL	6 155	43 903	129 955
Veneer Volume (M^3)	NIL	17 167	25 260	142 376
Sawn Timber Volume (M^3)	30 063	10 016	77 075	838 694
Logs Volume (M^3)	1 386 107	6 187 654	10 332 238	9 449 206
Export FOB Value (M$)				
Sawn Timber	3 670 662	935 541	25 029 472	382 797 077
Logs	57 393 045	374 422 613	2 179 194 409	2 198 990 200

Source: Adapted from *Forestry in Sabah* 1989, especially Appendices 4, 6 and 8.[46]

9 The 'Lucky Country'

Malaysia's Twentieth Century Economic Transformation

J.H. Drabble
University of Sydney

In economic terms the principal world-trend over the last two centuries or so has been the transformation of predominantly agrarian societies into industrialised ones. This process occurred first in northwest Europe, with Britain the pioneer from the late eighteenth century, spreading to North America, Russia and Japan before World War II and in recent decades to much of the Asian region, and parts of Latin America and Africa. In many of the latter areas, however, progress to date has been very patchy. A major contrast can be seen in the patterns of change. Whereas a majority of the pre-World War II pioneers developed manufacturing industries comparatively quickly, serving both domestic and overseas markets, many post-1945 entrants, especially those with relatively small domestic markets, have had varying degrees of difficulty in embarking successfully on a similar transition.

This broad distinction coincides with the global expansion of (largely western) imperialism in the late nineteenth and first half of the twentieth century. This in turn was closely associated with an international division of labour in which countries under colonial rule developed primary commodity-producing economies catering to the demand for raw materials etc. from the industrialised countries, which in return supplied manufactured goods. The former have been labelled 'export economies' by J.V. Levin[1] because of the pervasive scope of this activity. The outstanding characteristics were: (i) that, in origin, such economies were usually the outcome of 'the abrupt imposition of highly specialised international trade upon a previously unadvanced economy'; (ii) most of the factors of production (capital, labour and enterprise) had to be imported since the indigenous society was oriented towards production for subsistence, not profit; (iii) a large proportion of the earnings from exports was remitted overseas. Levin argued that:

> In some cases the export economy was but a transitional stage in the development of a balanced [i.e. industrialised] economy. In most cases, however, it was a stage at which the country remained for decades or even centuries, while the characteristic pattern blocked further advance towards a balanced economy.[2]

Countries in this category were therefore not well placed to embark on

a transition, since their economies were dualistic, i.e. not integrated. 'A thriving export industry could exist for decades alongside a stagnating poverty-stricken domestic sector'.[3] The need for structural change based on industrialisation has been driven by the uncertain market prospects for primary products (due to the appearance of substitutes such as synthetic rubber) and fluctuating revenues therefrom in the second half of the twentieth century, the globalisation of industrial production leading to a new international division of labour, and the need to generate employment for rapidly growing populations (at 2 to 3 per cent a year). Levin wrote at a time (1960) of recent independence for many countries, noting that a 'fundamental revolt' was under way involving 'vigorous action against foreign factors of production' in order to break away from the structure of the colonial export economy.[4] This 'vigorous action' involved a range of measures, including wholesale expropriation of foreign-owned assets in some instances, for example, Indonesia in 1957, Burma after 1962, which had highly adverse consequences for the industrialisation of their economies.

Malaysia provides in many respects a prime example of the export economy described by Levin. For much of the last two centuries it has been a leading producer of primary products, such as rubber, tin, palm oil, timber, iron ore, petroleum, liquified natural gas etc. The economy during the colonial period, especially in the case of Malaya (Peninsular Malaysia since 1963), was exceptionally open in every sense – to international trade, foreign capital inflows, and immigration of labour from countries with population surplus (India, China, Indonesia, Philippines etc.). As late as 1970 primary exports in total were still nearly 32 per cent of Malaysia's GDP. In the ensuing quarter-century, however, a transition has been effected to an industrialised structure which has brought the country near to Newly-Industrialising Country (NIC) status. By 1990 nearly 27 per cent of Malaysian GDP came from manufacturing industry.[5] Nonetheless the economy remains heavily export-oriented, but with manufactured goods increasingly occupying the leading position.

In achieving this transition Malaysia has been fortunate in many respects, but the term 'lucky country' is, nonetheless, a highly subjective one. The twentieth century economic history of Malaysia has certainly not been without its problems, for instance the impact of the global economic slumps from 1929–32 and the mid–1980s with resulting high unemployment, business failures etc. Nonetheless, the aim of this chapter is to argue that despite Malaysia's deep roots in an economic structure similar to that described by Levin, its largely successful transition from a predominantly primary producer under the colonial government to a rapidly industrialising country under the national government has been comparatively smooth and straightforward. There are strong political and economic continuities throughout this period, and few sharp discontinuities – certainly no 'fundamental revolt' against the structure of

the colonial economy soon after independence, as in the Burmese and Indonesian cases just mentioned. This is not meant to imply that the national government was less desirous of dismantling the colonial structure, but as we shall see this did not start until the late 1970s and early 1980s and did not involve arbitrary expropriation. The development path has been the outcome of fortuitous international trends, notably the global spread of industrialisation (especially within the East and Southeast Asian region) and specific decisions within Malaysia, particularly in the sphere of government policies. An important qualification to be made, however, is that much of what will be said applies primarily to Peninsular Malaysia. Sabah and Sarawak experienced much less growth as primary producers under colonial rule, and as part of the Malaysian federation have been industrialising at a much slower rate.

The major points to be addressed are as follows:

(i) the consequences of the openness of the Malaysian economy.

(ii) the continuing importance of primary production in the transition phase to industrialisation.

(iii) the role of the state in initiating and fostering economic growth.

One significant difference from the Levin model is that the establishment of primary export-oriented activities in Malaysia in the nineteenth and early twentieth centuries did not suddenly impinge upon subsistence economies previously isolated from external trading contacts. In previous centuries there had been involvement in long-distance trade, both intra-regional (for example, with the Indonesian archipelago) and inter-regional (e.g. to China, India and Europe), in the products of mining (tin, gold), agriculture (pepper, spices), the forests (rattans, timbers, resins) and the sea (fish, shells, *trepang*). The port-cities (Melaka, Brunei) were entrepots stimulating production over a wide geographical area, though not so much in their immediate Malaysian hinterlands. The origins of Malaysia's multiracial society also stretch back many centuries, but took on a particular impetus from increased Chinese immigration in the eighteenth century, mainly for mining tin and gold.

The British establishments, Penang (1786) and Singapore (1819) were set up as entrepots in this same tradition, but under western administration and with a new ethos (free trade). For much of the nineteenth century export production, with a leading role for Chinese interests, followed a 'boom-and-bust' cycle – spices, pepper, tapioca, gambier, sugar, coffee, none of which proved a permanent success.[6] Major changes came with the expansion of tin mining in Malaya after about 1850, and rubber in all three territories from around 1900. In the case of both these commodities Malaysia caught the upsurge of the second Industrial Revolution in the west (for example, motorised transport, tinned foods, electricity), and enjoyed a strong comparative advantage in primary production up to the interwar years.

This rapid growth was facilitated by mercantile networks (the British agency houses and Chinese trading firms centred on Singapore). The former mediated the import of capital from overseas and the export of raw materials to western markets (increasingly the USA). The latter provided a network of trading outlets throughout the region which acted as collecting centres for primary produce from smallholders, as well as actually stimulating the latter, for example by distributing rubber seeds to pilgrims returning via Singapore from the *haj* .

The inadequate supply of indigenous labour would also have constituted a major obstacle to the swift expansion of production on larger scale units, as the relatively sparse resident population saw no reason to take up permanent wage employment on estates or in mines. Rubber growing was taken up on smallholdings (under 40 hectares) just as readily as on estates, and evidence indicates that, except on the smallest holdings (a hectare or less) incomes were substantially higher than those obtainable from rice-growing or wage-work.[7] A bottleneck in labour supply was avoided because Malaysia was able to draw on the surplus population resources of India and China with only a relatively modest increase in wage rates. Government organised the importation of labourers from British India, whilst the flow of migrants from South China was basically in the hands of Chinese employers themselves.

The fruits of this boom can be seen for Malaya which, as Table 9.1 shows, enjoyed the most rapid growth in GDP per capita in the Asian region between 1900 and 1929.

Table 9.1 Annual growth (per cent) in per capita GDP in selected Asian countries, 1900–1990

	1900–29	1929–50	1950–73	1973–90
Malaya/Malaysia	4.1	-0.2	2.2	3.8
Burma	0.8	-3.6	1.7	1.4
Indonesia	1.7	-1.5	2.4	3.1
Thailand	0.2	0.2	3.8	5.2
Taiwan	1.2	-0.7	5.9	6.6
South Korea	1.8	-2.4	5.1	7.4
Japan	1.7	0.1	8.0	3.7

Source: Adapted from Pierre van der Eng, *Assessing Economic Growth and Standards of Living in Asia 1870–1990* (Milan: Universita Bocconi, 1994) Table 3, p. 101.

The bulk of the benefits from tin and rubber exports accrued to Malaya, as neither Sabah (then British North Borneo) nor Sarawak had comparable

locational and infrastructural facilities to attract major foreign investment (even had the Brookes been more favourably disposed towards 'European style' capitalistic development).

The growth of large scale capitalist enterprise (estates and mines) alongside peasant farms in this period has often been interpreted as the emergence of a 'dualistic' economy, that is, one with a 'modern' capitalistic sector alongside, but not integrated with, a 'traditional' non-capitalistic sector. It is certainly possible to see some elements of this in, for example, official policy on land matters which treated foreign and indigenous interests quite differently. The former were encouraged to apply for large areas of land in the most acessible areas of the Peninsula, whilst the latter were discouraged from growing commercial crops, notably rubber, and directed towards food production (rice, fruit etc.) following the Malay Reservations Enactment (1913) in the Federated Malay States (FMS).[8] However, in general terms the dualistic model does not fit particularly well. Malaya has been described as 'not one economy but three',[9] and this paradigm could apply broadly to the Borneo territories as well. Silcock identified three sectors: (i) large scale productive enterprises (estates, mines); (ii) the 'mercantile economy' of Singapore and Penang; and (iii) the peasant economy (rice, rubber, fish etc.). These sectors were not largely self-contained (as the dualistic model implies). Europeans had interests in (i) and (ii), whilst Asian migrants (largely Chinese) interests spanned all three. The indigenous groups were almost entirely confined to (iii), with a truncated economy in which dealings external to the village were handled by Chinese. Whilst this structure contained the seeds of the economic and occupational imbalance between the races which would later give rise to political tensions, it also provided the genesis of a local capital-owning class (the Chinese) who were integral to early post-independence development.

The British colonial regimes which established themselves in Malaya and northern Borneo in the late nineteenth and early twentieth centuries had a relatively restricted view (by later standards) of what constituted economic development. Their basic aim was to increase the output of commodities related to the most abundant local resources (land, mineral deposits, etc.). Officials played a facilitating role by building the physical infrastructure (roads, railways, ports, communications), and the institutional structure (e.g. the legal and monetary systems). Their general view was that export production was best done by capitalist-type enterprise, primarily European-owned although, as we have noted, the Brookes did not regard this as suitable for Sarawak (this did not prevent them from giving a wide-ranging monopoly to the Borneo Company from the 1850s).[10]

Government intervention in the actual operation of the economy began from around the First World War with controls over the export of rubber and tin (commodities of strategic value) to prevent supplies reaching

Germany and its allies. During the interwar decades primary commodity prices suffered wide fluctuations, with the major industries tin and rubber facing the emergence of excess supply capacity vis-a-vis prospective demand. The colonial governments in the East were generally reluctant to become involved in measures of control, but the British metropolitan government decided, for reasons of imperial interest (Malaya was Britain's largest US dollar earner), to impose several periods of export restriction. These were the Stevenson Rubber Restriction Scheme (1922–8), the International Rubber Regulation Agreement (1934–41), and the Tin Restriction Agreement (1931–41). The second of these included a ban on new plantings of rubber which, except for a small allowance in 1939–40, was not lifted until the 1950s. In addition, from late 1930 government in Malaya refused to give out further land for rubber growing.[11] There is no doubt that these schemes hindered the development of these industries along economic lines because high-cost producers (mainly European ventures) were protected against competition from low-cost ones (mainly Chinese mines and indigenous rubber smallholders). Structural change was thereby precluded, and new capital formation largely ceased during the two decades between about 1930 and 1950, which of course included the war period (1942–5) that saw export activity progressively brought to a halt.

The prospects for diversification through local industrialisation during the interwar period were very limited. Neither the tin nor the rubber industries had strong linkages with the domestic economy. The British agency houses were almost entirely trade-oriented. The Straits ports, Singapore in particular, had a concentration of Chinese business enterprises spanning agriculture (rubber, pineapples), primary product processing and manufactures (for example, soap, saw mills, cement, rubber goods), but a local capital market was slow to develop. The British exchange banks did not as a rule lend long-term to producers, whilst Chinese deposit banks were relatively small as yet. The Great Depression (1929–32) put many businesses under severe financial pressures which forced some leading Chinese entrepreneurs, for example Tan Kah Kee, into liquidation.[12] Though the per capita GDP declined over the period 1930–50, including a disastrous slump during the war, Malaya's performance was still better than most countries in the region (Table 9.1).

The immediate postwar years (1945–8) were ones of reconstruction, with prewar levels of output being regained rapidly, at least in Malaya where the factors of production were quickly regrouped. The Borneo territories, now transferred to direct colonial rule from London, had suffered extensive damage to a basically flimsy infrastructure. Planned development started throughout Malaysia in the early 1950s, after the shortlived Korean War boom (1950–1). Despite the fact that long-term market prospects for the major primary industries were not encouraging (notably rubber which now faced competition from the synthetic product),

attention focussed on rejuvenating the resource-based industries. In the case of rubber a programme was embarked on replanting with high-yielding trees financed by a special export duty. This was in marked contrast to the closest competitor, Indonesia, whose export industries stagnated throughout the 1950s and early 1960s.

On achieving independence in 1957 the government of the Federation of Malaya inherited the three-sector economy described earlier. It also inherited a multi-ethnic society which entered the new era under the Alliance system of government which guaranteed the political preeminence of the Malays, whilst maintaining an open economy in which the other races and foreign capitalists could pursue their economic interests quite freely. The situation became more complex with the establishment of the Federation of Malaysia in 1963 which brought together economies at different levels of development. These were the staple port of Singapore (briefly until 1965), the relatively advanced resource economy of Malaya (heavily concentrated along the west coast of the Peninsula), and the less-developed Borneo states which were expected to receive an economic stimulus from membership. Since that time the system of government has remained unchanged and relatively stable (unlike much of the region), the Alliance in Malaya absorbing other parties into the National Front in Malaysia. Whilst *bumiputra* (Malays and other indigenous people) political primacy has been maintained, and the economy restructured under the New Economic Policy (NEP) from 1970, the need to retain support from other ethnic groups, has given rise to a political regime which 'is neither fully democratic nor fully authoritarian but contains elements of both'.[13]

In economic terms the government's aim has been to ensure development of the economy, particularly through industrialisation, but at the same time to promote the material interests of the *bumiputras* in terms of ownership of wealth and participation in employment. The latter has also required a need for rural development as the majority in this group continue to depend on agriculture for subsistence. Overall, the goal has been to achieve better integration of the three economic sectors (following Silcock's characterisation), whilst ending the close identity between race and economic function and eliminating poverty irrespective of race.

The 1960s saw government at its most liberal, with a continuation of the broad parameters of agricultural and rural development (for example, Federal Land Development Authority (FELDA) land schemes, rubber replanting) started before 1957. The First Malaysia Plan (1966–70) devoted 25 per cent of expenditure to this sector.[14] Diversification proceeded with a movement out of rubber and into oil palm, in strong demand on the world market. A new element of industrialisation came in with the Pioneer Industries programme from 1958, offering incentives (such as tax holidays) to manufacturing ventures directed at import-

substitution (ISI). A mission to Malaya in 1955 from the International Bank for Reconstruction and Development had recommended diversification in this direction in order to reduce dependence on rubber and tin.[15] A further urgent reason was the need to provide employment outside agriculture for growing numbers of young people, with the population of the Peninsula increasing at around 3 per cent a year. Population was also growing rapidly in Sabah and Sarawak, but in absolute terms was still very small (barely 1.2 million in total) and very largely rural. Primary production remained the basis of the economy of these territories, with timber and oil taking the lead.[16]

The 1960s ended with ethnic tensions in Peninsular Malaysia boiling over into riots in May 1969 over the unbalanced distribution of wealth, employment and other benefits of development. The New Economic Policy (NEP), to run from 1970–90, aimed to combine continued development with redistribution, setting specific targets for *bumiputra* ownership (30 per cent of corporate share capital), and employment etc. The import-substitution industrialisation had not effected a great deal of structural change in the economy thus far. Industry's share of GDP in Peninsular Malaysia had risen from 8.6 per cent in 1960 to 15.6 per cent in 1970, from 8.2 per cent to 9.4 per cent in Sarawak, and remained virtually unchanged at 2.2 per cent to 2.4 per cent in Sabah.[17] The bulk of investment had come from overseas, and was primarily of a capital-intensive type which generated relatively few new jobs. Active unemployment in Peninsular Malaysia was increasing during the 1960s, especially in the towns, standing at about 10 per cent in 1967/8, but with the incidence among women (14.4–16.1 per cent) running at over twice that among men (7.6–7.8 per cent).[18] Thus, under the NEP the focus of industrialisation shifted to export-oriented manufacturing.

Over the next twenty years there was a fundamental structural shift in the Malaysian economy whereby manufacturing industry increased to nearly 27 per cent of GDP, as noted at the beginning of the chapter. In terms of output, the period of fastest growth was the 1970s. With 1969=100, the overall production index stood at nearly 327 in 1980. Between 1981–9 (with 1980=100) the index went to approximately 186, with progress slowed by the slump in the world economy (1984–6).[19] The leading industry was electrical/electronic machines and appliances, followed by textiles, rubber products, transport equipment, chemicals and base metals/metal products.

Notwithstanding the switch in emphasis to export production noted above, domestic demand within the Malaysian economy constituted a strong force underlying expansion, especially during the 1970s. There was also a powerful income boost from good primary product prices between 1971 and 1974, followed by windfall profits from two sharp rises in world oil prices in 1973 and 1979. Large offshore petroleum deposits were discovered in East Malaysia, and Trengganu on the east coast of the

Peninsula. Exports resumed the leading role from 1982 until the slump of the mid-1980s.[20] In agriculture the rejuvenation of the rubber industry through replanting was virtually complete, oil palm became a widely disseminated crop both on estates, and land development schemes for smallholders in West and East Malaysia. In addition, several minor crops such as cocoa helped to diversify the agricultural base.[21]

During the NEP the primacy of private enterprise and government as investors was reversed. The former played a leading part in the boom of the early 1970s, with foreign direct investment practically tripling in response to such incentives as the Free Trade Zones (FTZs), starting with Penang in 1971, which offered developed and serviced industrial sites. The Industrial Coordination Act of 1975 had a dampening effect on both foreign direct investment and domestic investment which fell by 70 per cent and 60 per cent respectively up to 1977. Chinese Malaysian investors in particular became reluctant to commit funds. Government, which had already provided 40 per cent of total investment, now stepped in to maintain the impetus, investing either directly or through one of the proliferating number of state-initiated and funded agencies, for example, Permodalan Nasional (National Equity Corporation). By 1982, 50 per cent of investment came from the state, whose revenues had benefitted greatly from the oil booms. This undoubtedly facilitated the passing of the extensive agricultural and mining assets controlled by British agency houses into Malaysian ownership and control mainly through purchase of a controlling interest through transactions on the open market.[22]

The world slump of the mid-1980s temporarily applied the brakes to this progress. Declining oil prices, and hence revenue, forced government to re-assess development priorities, especially in respect of the extremely costly Heavy Industries of Malaysia (HICOM) programme to establish heavy industries, for example, steel, cement, car assembly, which had only just got under way as a second round of ISI. From the second half of the 1980s the state steadily decreased its direct involvement in the economy, switching the emphasis to privatisation of public enterprises, and winding down many loss-making agencies. Foreign direct investment once again stepped into the leading role in the manufacturing industrial sector. As the world economy recovered from the late 1980s, so too has Malaysia's annual growth rate, averaging 8–9 per cent up to the present time (mid–1990s). Much development has concentrated on infrastructure, with projects such as the East-West and North-South highways in Peninsular Malaysia, and huge hydro-electric schemes in East Malaysia (for example, the Bakun dam in Sarawak). Clearly the 1980s have been crucial in Malaysia's transition to an industrialised economy approaching NIC status. In 1981 merchandise exports constituted 46.7 per cent of GDP; by 1990 this had risen to 67.6 per cent. By contrast Thailand went from 19.8 per cent to 28.6 per cent, whilst Indonesia dropped from 27.3 per cent to 22.9 per cent.[23]

Malaysia has also had the good fortune to be well placed geographically in relation to the booming markets of East Asia and the Pacific rim. Between 1970 and 1988 the share of Malaysian exports going to this region rose from 68.1 per cent to 75.1 per cent, whilst imports therefrom rose from 65.1 per cent to 78 per cent. This re-orientation was largely at the expense of European Community countries whose shares dropped heavily from 20.3 per cent to 14.4 per cent, and from 23.4 per cent to 13.3 per cent respectively.

The rapid growth of the last quarter-century has some strong similarities to the booms of the earlier part of the century which created the primary export economy, notably the crucial role of foreign capital and also foreign labour at times of strong demand. We have already looked at the first of these. The industrial growth created a demand for labour, initially unskilled, as much of the work involved repetitive manual assembly proceedures. This was met primarily through expansion of the domestic wage labour force, notably by a shift of Malay labour from the rural areas, many of whom were women abandoning former subsistence tasks (for example, in the rice fields) and smallholding work (for example, rubber tapping). Factory work in the FTZs also proved more attractive to urban women than, for example, domestic service. This was particularly so in Peninsular Malaysia where women took just over 95 per cent of the new jobs created by manufacturing industry between 1980 and 1986/7 (a share surpassed only by Singapore).[25] Other areas of strong demand included the construction industries.

By the late 1980s signs of labour shortage were appearing in the agricultural sector (estates and smallholdings). The overall level of unemployment fell from around 8 per cent during the slump to 6 per cent in 1990, and has continued to drop to 3 per cent in 1993.[26] As in the tin and rubber boom, it was immigrant labour (legal and illegal) attracted by higher wages that prevented a bottleneck from developing. The main sources were Indonesia, Philippines and Bangladesh, totalling some 500 000 in Peninsular Malaysia by the mid-1980s.[27] Most of these have helped to fill the shortfall in agriculture and in construction industries. Malaysia continues to face constraints in labour supply, though by the early 1990s this increasingly involved shortages of skilled workers.

Industrialisation in East Malaysia made far less progress during this period, accounting for 7 per cent of GDP in Sabah in 1990, and 12.8 per cent in Sarawak.[28] Locational factors, limited infrastructure and higher costs (e.g. land and electricity), together with a dependence on Peninsular Malaysia for imports of many manufactured goods, made these territories less attractive to industrial investors. Industrial estates, which had spread to all states in Peninsular Malaysia by the late 1980s, were relative latecomers here. Industrialisation was directly related to the local pattern of production, principally foodstuffs and wood products. Larger projects were the liquified natural gas plant at Bintulu and an ASEAN fertiliser

project, both in Sarawak.[29]

OVERVIEW

In the late twentieth century the Malaysian economy is well advanced towards industrialisation. The achievement of the fully industrialised economy planned by government (Vision 2020) still lies some considerable way ahead, but the mould of a primary commodity dependent economy which had determined the pattern of growth since the late nineteenth century has been irrevocably broken (though this is much less true for the East Malaysian territories which continue to depend heavily on primary production). The Malaysian GDP per capita of $5775 (1985 international dollars) in 1990 was second only to Singapore ($14 441) in the Southeast Asian region,[30] though such high averages reflect the relatively small populations of these territories.

Viewed in the light of Levin's characterisation of the problems facing transition set out at the beginning of this chapter, the Malaysian case appears as one in which the structure which developed under colonial rule has not proved unduly resistant to change. The constituent elements of the three-sector model described by Silcock have increasingly interacted since independence to produce an economy which is still strongly export-oriented, but with a growing manufacturing sector alongside the resource-based industries. The once-dominant British interests in rubber moved smoothly into oil palm, and the former industry now has indigenous smallholdings as its largest sector. Government policy under the NEP was aimed to make the peasant farmer more commercial. Chinese agricultural and mining interests have broadened out into industry, real estate, finance etc. The NEP has achieved its major aim of producing a *bumiputra* middle class with substantial business interests, though it should be noted that this has been the result primarily of political patronage rather than the autonomous growth of a large class of independent entrepreneurs.[31]

A considerable part of Malaysia's 'luck' has come from exogenous factors. Throughout this century successive boosts have been gained from the international economy with its demands for tin, rubber, timber, palm-oil, petroleum etc., and the various categories of manufactures noted above. Foreign capital and labour have been available at crucial times (for example, the early 1900s and the 1980s) to avert possible bottlenecks in the development process. Apart from the stagnation in the interwar years and the war period, as one industry has tailed off, the impetus has quickly been taken up by another. This latter feature was particularly important during much of the NEP when Malaysia reaped a double bonanza from both the primary sector (oil, gas and timber) and secondary manufacturing industry, without which many policies involving substantial subsidies (e.g. a total of some $851 million to agricultural development from

1976–81[32]) would not have been practicable. The distribution of certain of these gains within Malaysia was affected by the fact that Sabah and Sarawak were allowed to retain only a 5 per cent royalty on petroleum production. The Federal government took a similar royalty, but in addition collected dividends and taxes from the national oil company, Petronas.[33]

Endogenously, Malaysia has not at any stage faced the problem of a population large enough in absolute terms to press heavily on the means of subsistence. Since independence the annual growth rates have averaged between 2.3 and 2.7 per cent,[34] which has certainly skewed the age structure towards younger groups and brought growing numbers onto the employment market. Unemployment has been a continuing problem, especially during the slump of the mid-1980s which saw sharply increased levels. However, since then the secondary industry and services sectors of the economy have generated jobs at rates which have brought down unemployment levels sharply. As we have seen, large numbers of migrant workers have been drawn in to fill shortages in the agricultural sector.

The state, whether colonial or independent, has always played an important role, but this has varied over time. Government was strongly interventionist in the 1920s and 1930s, and again in the 1970s and early 1980s. At other times the role was more supportive while private enterprise ran ahead, e.g. the early 1900s, 1950s/60s, late 1980s/90s. The results have been mixed. Supportive policies have worked well as, for example, the building of the road and rail networks, especially in Malaya/Peninsular Malaysia. Intervention, on the other hand, produced the commodity control schemes of the interwar years which slowed structural change, and the costly (and in many respects premature) HICOM experiment on the 1980s. Thus it is unhelpful to try, in principle, to classify the state as 'strong' or 'weak' in an absolute sense – it is important to look at the particular policies adopted and the circumstances at a given point in time.

The point may be raised that much of what we have identified as good fortune in the Malaysian experience can be seen in other countries such as the neighbours, Thailand and Indonesia, which have participated in primary commodity booms, and which are now rapidly industrialising – so can Malaysia be said to have been particularly lucky? Over the long-term perspective adopted in this chapter, what stands out about Malaysia has been the comparatively high degree of political continuity and stability, coupled with openness to foreign factors of production, which have made the transition to an industrialised economy unusually smooth.

Finally, though, we should note that Malaysia's economy is by no means problem-free. The gains from labour-intensive industries with relatively low capital and technical thresholds have been largely exploited, and there is a need to move into high-tech fields. There is a continuing dependence on 'footloose' foreign investment, for example, the electronics

industry, which does not have strong linkages to the domestic economy. The NEP produced a climate in which a strong connection developed between political power and business patronage – the phenomenon of 'money politics' – which inevitably produced some distortions in the distribution of resources.[35] Until late 1997, these have been absorbed without undue difficulty, but with a slowing down in the growth rate the situation could change substantially. As it is, the leadership of UMNO decided that in the 1996 elections for party positions, the dominance of 'money politics' should be downplayed,[36] though whether this will eventually spread to the wider economy remains to be seen.

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Index