# Development and Environment in Peninsular Malaysia

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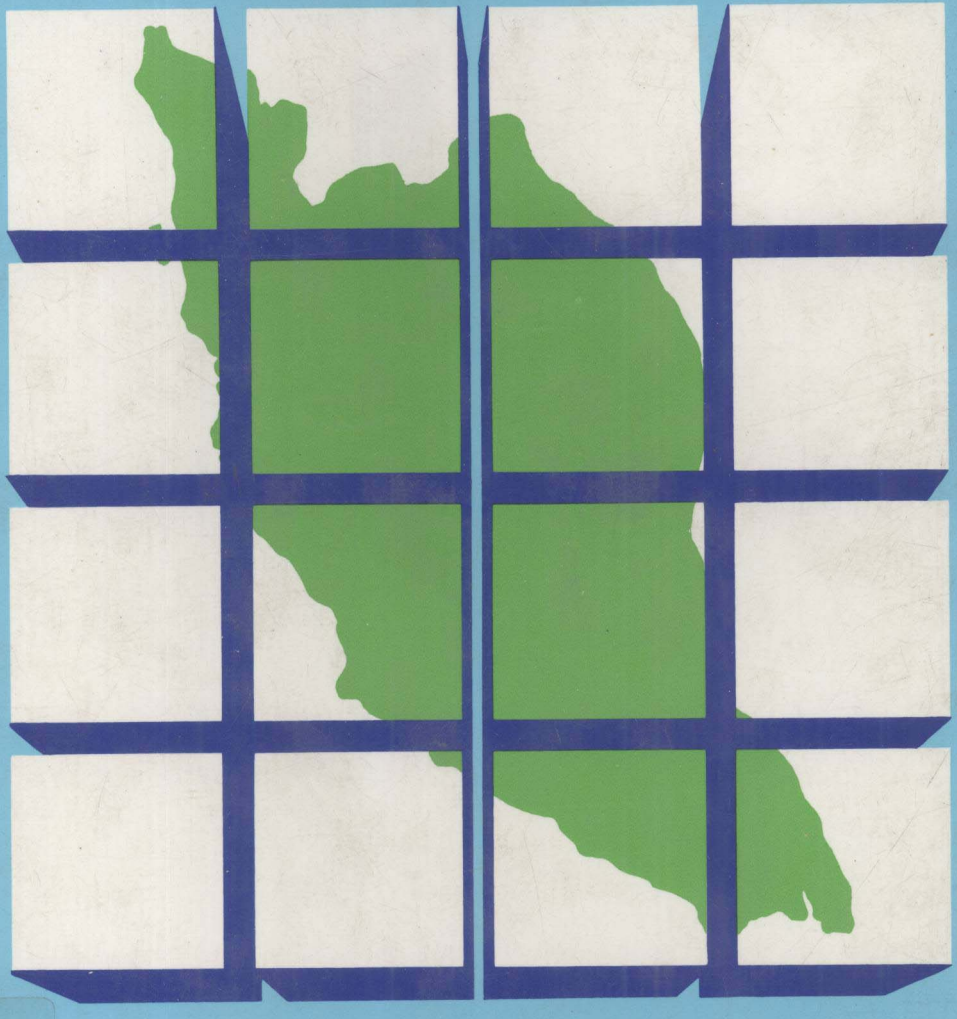

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# FRAMEWORK

In the early years of the present century, according to Sir George Maxwell (1907, p. 2), almost the whole of the Malay Peninsula was covered in forest. He wrote:

> It is not that the country is uninhabited, for it has a population of some hundreds of thousands: but it is that the inhabited area, every yard of which has been won from, and hacked out of the forest, is infinitesimal in comparison with the extent of the forest that remains untouched.

By 1990 nothing may remain of the lowland rain forest (Marshall, 1973).

A century ago most of the Peninsula was undeveloped and largely unknown to the outside world (Skinner, 1878; Swettenham 1880, 1885; Bird, 1883; Tennison-Woods, 1884). Almost a hundred years later we are told, in the *Financial Times* of London (8 April, 1980), that

> Malaysia is growing rapidly more prosperous and its people are growing steadily more self-confident at a time when many countries around the world are swamped with inflation and girding themselves to face economic recession.
>
> The country's wealth traditionally rests on five basic commodities.
>
> The world relies on the Malaysians for almost 60 per cent of its palm oil, more than 50 per cent of its rubber, 40 per cent of its tin and most of its pepper. Malaysia also exports more timber than any other country.
>
> Considerable reserves of oil have been discovered in Malaysia and it is thought to have some of the largest known reserves of natural gas. In addition, the country is almost self-sufficient in rice.
>
> Export income has risen substantially and the economy has managed to sustain gross national product growth at a steady 8 per cent during the past five years.

Change, especially in the country's most economically advanced region, Peninsular Malaysia, has been the order of the day. Once a seemingly impenetrable jungle fastness, a veritable *terra incognita*, Peninsular Malaysia is now an important contributor to the world economic system. In achieving its current economic status the region has undergone far-reaching changes in habitat and society and in relations between the two. Certain spatial and temporal facets of those changes are the focus of this book. We have, in short, two major objectives, namely to describe the processes of development and modernization that have shaped the economy of Peninsular Malaysia, and to examine the impact of those processes on the natural, and increasingly on the man-made, environments of the region.

During the 1950s many Third World countries faced the dual challenge of development and nation building as they moved towards independence. The countries that developed most rapidly were those that deepened and broadened their specialization in agriculture. In the case of Malaya (later Peninsular Malaysia) agricultural production and exports were expanded in order to offset lost income due to adverse trade conditions. The country's greater commitment to agriculture was accompanied by diversification and modernization : replanting and new planting on rubber smallholdings and estates, greater emphasis on oil palm, and investments and innovations in padi production all helped to strengthen the agricultural sector of the economy. At the same time agricultural specialization supported relatively successful industrialization. Those who secured higher incomes from agricultural expansion provided a market for manufactured products, while increased agricultural production also sustained the rapid development of numerous local processing industries. Eventually primary exports were able to support the capital and necessary import requirements of the industrial sector (World Bank, 1979). Between 1960 and 1977 the contribution of manufacturing to Gross Domestic Product doubled, thereby increasing to 18 percent. Within the large and heterogeneous developing realm of today Peninsular Malaysia stands out as a notable example of successful development. Compared to a number

of its Southeast Asian neighbours, Peninsular Malaysia is indeed a prosperous region. Only Singapore and Brunei had higher per capita incomes in the early 1970s (Yeung, 1976).

Despite its various successes, Peninsular Malaysia faces a variety of problems, some of them of long-standing, while others are more recent : regional and ethnic income disparities, shortages of housing, services, utilities, and employment in rapidly growing cities, rural poverty, concentration of industry in a few metropolitan areas, and persistent disease hazards are some important examples. At the national level (Peninsular Malaysia together with Sabah and Sarawak) there are socio-economic, cultural, and political problems of integration to be solved. In recent years in particular the environmental consequences of rapid economic growth have become increasingly evident in both rural and urban areas.

Everywhere and at all times man has brought about selective changes in his surroundings or environment. Indeed some of the world's most admired landscapes, such as the picturesque English countryside or the dramatic rice terraces of the Orient, are very largely the product of human energy and ingenuity. It is worth keeping in mind, then, that man's role as an agent of environmental change is an enduring facet of human history and one that need not result in aesthetic or ecological impoverishment.

Since the onset of the Industrial Revolution, however, the pace of environmental change has greatly speeded up. Man's new-found knowledge and techniques and his more complex socio-economic and political organization have given him ever greater control over the natural world. Increasingly we live amidst our own creations. Man's ability to manipulate the environment, however, as we know from the voluminous literature of recent years and the seminal work of Marsh (1965, 1864) and others in the past, must be balanced against his capacity to create widespread and serious environmental degradation. Although there is a very substantial literature on various facets of the land and life of Peninsular Malaysia, no previous work has attempted to draw together the multifarious environmental consequences of man's activities in the region. This we attempt to do in the context of both past and present.

In Peninsular Malaysia, as elsewhere, flagrant disregard of or failure to understand natural processes may result not only in problems of air and water pollution, soil erosion, flooding, and destruction of living things, but may also give rise to various forms of human hardship. *The Far Eastern Economic Review* (1 September, 1978), quoting an ecologist, provides an example:

> No one has seriously considered the effect of a damaged environment upon the rural dweller. Suddenly he can no longer depend upon a prime source of protein — fish. He cannot bathe in the river because he gets ill. With heavy siltation, the river is no longer an effective sewage disposal system. What does his life in the village become but a nightmare? He moves away.

The relations between economic development and environmental change are highly complex. Consider the following brief example. The rapid growth of the timber industry in Peninsular Malaysia has resulted in rapid deforestation. To come to grips with this process would require, among other things, an understanding of the timber industry as an economic enterprise, the techniques it employs, its role in the national economy and in world trade, and its ability to generate rural employment. Consideration, in turn, must be given to the environmental consequences of this activity : What is the impact of the timber industry on the hydrological cycle? Specifically, what does this activity imply in terms of surface runoff, river water volumes, the frequency of flooding, the quality of water in coastal and riverine settlements, and the supply of water to rapidly growing towns and cities? What kind of impact does forest exploitation have on the flora and fauna of the Peninsula? How will the stability of the rain forest environment be affected? To answer these and related questions would require an appreciation of the functionally interrelated components of the biophysical environment of the region, and a yardstick against which to measure the environmental impact of timber exploitation.

Relations between 'development and environment' are further complicated by rural and urban poverty and by the general absence of environmental awareness. Poverty gives rise to its own environmental problems, such as the faecal contamination of rivers, ponds, and wells, and the generally poor living conditions that are experienced in urban squatter settlements and slums. To those who are poor, what is "a bit of landscape, a wild river, or a country's wildlife when its destruction may mean the betterment of their life, even if only for a short period of time?" (Smith, 1972, p. 400). If poverty is to be reduced, priority must be given to quantitative increases in jobs, housing, schools, hospitals, roads, cash crops, industrial output, and to more and better food, all of

which will inevitably result in environmental change.

On the other hand, it is possible to regulate development so that environmental impact is minimized, controlled, and effectively managed. In many cases economic development is accompanied by insufficient environmental care and inadequate knowledge of the biophysical environment. As a result, environments are sometimes created that deny the benefits of economic programmes to certain groups of people, and perhaps, ironically, to those groups specifically intended to benefit from development strategies.

Interest in environmental quality in Peninsular Malaysia is confined to a small number of government officials, academics, and special interest groups. (We should keep in mind that widespread interest in environmental matters is a relatively recent phenomenon even in so-called developed societies.) Because environmental awareness is only now beginning to emerge in Peninsular Malaysia, it will be necessary for the government to bear the major responsibility for environmental protection. Its task, however, is an extremely difficult and sensitive one, because somehow it must balance its avowed aims of achieving rapid economic development and societal change against the need to preserve, conserve, and manage the environment for present and future generations. As MacAndrews (1976, p. 12) has observed, the important issue that must be resolved in the near future is "*how* to devise economic yet effective environmental controls."

This book is a study in man/environment relationships, its major emphasis being on the environmental impact of different economic activities. At this point we should clarify what we mean by these terms and concepts. 'Man' does not refer to mankind, but rather to specific groups of people — farmers, fishermen, urbanites and others — in their social and physical milieux. 'Environment' is understood to mean that which surrounds; as such it embraces not only the natural habitat of soil, rock, air, water, and living things, but also man's various alterations of and additions to the surface of the earth, or in other words, the man-made or cultural landscape. The distinction that is often drawn between the natural landscape and the cultural landscape is usually more convenient than real. Rather than a polarized distinction, it is perhaps more useful to think of a landscape continuum, the primitive or wild landscape being at one end of the spectrum, the city at the other, with the rural, domesticated scene forming a kind of middle-earth. At any rate, even in the most primitive societies (of which there are few remaining), man induces change in the natural world. In varying degrees, then, man lives in association with the natural and man-made elements that constitute his surroundings or environment (Hewitt and Hare, 1973).

The discipline of Geography has traditionally claimed the study of man/environment relationships as one of its major preoccupations (eg. Pattison, 1964). Consequently a substantial literature has grown around the themes of man's impact on the natural world, the evolution of cultural landscapes, and, in recent years, on the values, attitudes, and intentions that different groups of people attach to their surroundings (Manners and Mikesell, 1974; Tuan, 1974). Although much of this work has been focused on environments and societies of the economically and technologically developed realm, geographers have also been interested in man's impact on humid tropical environments (eg. Moss and Morgan, 1977). In general, however, geographers and other scientists have been slow to appreciate our need, first, to understand the operation of natural processes, and secondly, to comprehend and measure the impact of man's activities on these processes. The crucial point to emphasize here is that only with such knowledge can we begin to devise appropriate resource management strategies.

This is not to claim that we do not know a good deal about the nature of the tropical rain forest, tropical soils, weathering, fluvial erosion, and some of the environmental consequences of human action in the humid tropics, but rather that the interconnectedness of these various components and processes has not, at least until recently, been fully appreciated. Perhaps the main reason for this situation is that no academic discipline has been effectively concerned with the biophysical environment as a whole, and least of all with man's role as an agent of change within such a holistic framework. Geography, with its roots in both the natural and social sciences, might have carved out — in cooperation with other disciplines — such a holistic niche for itself, but largely because of its internal divisions has failed to do so (Mikesell, 1974).

Because of the general absence of a holistic approach to the study of the humid tropical environment, our understanding of process inter-

relationships has tended to be based on unsatisfactory assumptions derived from resource inventories or rather simplistic descriptions of soils, climate, landforms, and other individual components of the biophysical environment. Furthermore, since many inventories and descriptions were based on concepts developed in the mid-latitudes or for arid regions, they have generally proven to be inappropriate in the context of the humid tropics. If our realization of the importance of interrelatedness in the biophysical environment has been rather slow to emerge, so too has our understanding of how, in precise terms, human activities affect natural processes and systems and how the biophysical world adjusts to the impact of human interference.

The biophysical environment of Peninsular Malaysia is currently being altered at an unprecedented pace. Given that many of man's activities in the region are environmentally disruptive, there is an urgent need to adopt systems of economic production and resource management strategies that would result in a balanced relationship between habitat and society. A more meaningful stewardship of the region's natural heritage will require comprehensive knowledge about the operation of natural processes and the results of man's impact upon them. This book is a contribution to that knowledge.

The concepts of development/underdevelopment, modernization, and economic growth are complex and subject to varying interpretations. Thus, for example, some scholars contend that underdevelopment is an active *process,* a state of dependency, largely the outcome of imperialism, and as such must be understood in the light of the structure and functioning of the world's political economy, whereas others claim that underdevelopment is a *condition* which will hopefully be eradicated by emulating the course of Western development and through assistance from the rich nations. In blunt terms, however, the gap between rich and poor countries is widening (Jenkins, 1970; Myrdal, 1971). Modernization usually implies transition from 'traditional' to 'modern' ways of life, modern commonly being understood to mean Western. Social change, however, is invariably more complex than this simple dichotomy implies, and the whole notion of modernization is fraught with the problem of ethnocentrism. In the rich multicultural setting of Peninsular Malaysia, modernization presumably means different things to different people.

Development is not synonymous with economic growth. Development implies a range of possibilities for a more decent existence. Down-to-earth development goals have been spelled out by de Souza and Porter (1974). Their list includes the following: a healthful balanced diet throughout the year, medical care and disease control, environmental sanitation, job opportunities, adequate housing, economic systems that are in balance with the environment, and social, political, and economic equality. Economic growth "is not development, except insofar as it enables a country to achieve [its] human goals. . . (de Souza and Porter, 1974, p. 4).

Prior to the 1960s social scientists gave only passing attention to the problems of development that faced the Third World. By the mid-1970s, however, spatial models of modernization and concepts of development/underdevelopment were of such number and divergence that they seemed to warrant critical examination (eg. Brookfield, 1975). The argument in much of the literature at this time suggested that the 'Western approach' to development, which supports, for example, the importance of industrial growth and innovation diffusion through an urban hierarchy, simply fails to provide adequate explanation of the process. Similarly, deficiencies in the 'modernization paradigm,' in terms of both planning prescription and as predictor of change, were recognized (Freeman, 1979).

The foregoing brief discussion is intended to clarify what this book is and what it is not. It is not a text on development and modernization *per se.* Our objectives are much more modest. The bulk of the work is devoted to an examination of the relationships between specific economic activities — rubber, oil palm, padi, timber exploitation, tin mining, industrialization — and their environmental consequences, both past and present. Since our emphasis is on temporal as well as spatial change, we have traced the origins and growth of the aforementioned activities and examined their current importance in the space economy of the Peninsula. Although economic activities are emphasized, we do include a brief discussion of the spatial diffusion of modernizing institutions. While such diffusion should not be viewed as evidence of thorough and widespread change at all socio-economic levels, we believe that these patterns are an integral part of development in terms of the spatial extension of potential social, cultural, and political as well as economic change. In our

discussion of current urban and regional development policy, we recognize that the growth centre concept may, for a variety of reasons, fail in carrying out its intended function. Malaysian development policy, however, in its attempt to bring about growth in those regions which lag well behind the major urban cores, continues to utilize this notion.

It should be emphasized that our intention is not to explain changes in development and environment within a model building or theoretical framework. Nor, for that matter, do we offer any prescription for alternative regional development policies. What we do provide are some new insights and descriptions of the environmental consequences of certain forms of economic activity within the humid tropical setting of Peninsular Malaysia.

Why have we chosen Peninsular Malaysia for this study? The immediate response must be that we know it better than any other part of the so-called Third World, each of us having lived in and conducted research on the region for varying periods of time. Two other considerations render Peninsular Malaysia a particularly favourable locale for the kind of work we have undertaken : the first is that it has undergone rapid transformations in both society and habitat, the consequences of which in terms of changing man/environment relationships are worthy of study in their own right; while the second — and it is by no means of minor importance — is the wealth of available published information about the region. Since, for the most part, these various considerations do not hold for Sabah and Sarawak (East Malaysia), we have chosen to centre our attention exclusively on Peninsular Malaysia. It is our hope, however, that this book will be of some value in guiding the development process in East Malaysia, and, more generally, that it will be of interest to students, planners, and administrators in other countries of the humid tropics.

How is the book organized? Having stated our objectives above, Chapters One and Two establish broad societal and environmental contexts for the subsequent discussion of economic activities, modernization, and environmental change. Chapter One outlines the growth of population in Peninsular Malaysia from prehistoric times to the present, describes the distribution of population and its ethnic diversity, and briefly examines some population-related problems in the region. The emphasis in Chapter Two is on the components of the biophysical environment and the processes that operate within it, these being of crucial importance in understanding the consequences of man's role as an agent of change in the region.

Chapters Three and Four trace the economic development of Peninsular Malaysia from the time of earliest colonial contact down to the present. This historical approach, which emphasizes the cumulative impact of change, is retained in Chapters Five through Seven, which discuss, respectively, the nature and extent of environmental change down to independence in 1957 (Chapter Five), the major agents of rural land use change in the post-independence period (Chapter Six), and the environmental consequences of various human activities in recent decades (Chapter Seven).

In Chapters Eight and Nine the focus of attention shifts from the largely rural setting to that of towns and cities. The growth of the settlement system, trends in urbanization, urban population growth, and the demographic, economic, and societal components of urbanization are discussed in Chapter Eight, while in Chapter Nine some of the relatively new and rapidly growing environmental problems of urban areas are discussed in the context of the nation's largest conurbation — the Klang Valley. Chapter Ten places the major themes discussed throughout the book in the context of national development policy, planning, and environmental legislation. Finally Chapter Eleven provides a summary of the main topics raised in the text, emphasizes the role and significance in national development of Peninsular Malaysia's natural endowment, and discusses, with respect to landscape and life, some of the continuing contrasts between the western and eastern parts of the Peninsula.

The spelling of Malaysian place names varies from source to source. We have adopted as our guide to toponyms the English version of the *Third Malaysia Plan.* All monetary values, unless otherwise stated, are in Malaysian dollars (1 M$ = U.S. 47¢). The emphasis throughout the text is on metric units of measurement. In the great majority of cases these are followed by non-metric equivalents in brackets, the only exceptions occurring in Chapter Six (see p. 130) and in those cases where non-metric measurements are now rarely employed. In the alphabetical listing of references at the end of the book, five year plans and reviews of the plans appear under Government of Malaysia; all other government

publications are listed by Department or Ministry. These entries are followed by a separate list of items pertaining to 'environmental legislation,' environment here being given a rather broad meaning. The legislation is ordered by subject and by date (from earliest to latest) within each subject category.

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