

## CHAPTER XI

# Development and the Environment

### I. ENVIRONMENTAL CONSIDERATIONS IN DEVELOPMENT

661. Environmental improvement and protection will receive the full attention of the Government in the planning and implementation of programmes in the Third Malaysia Plan (TMP). It is vital that the objectives of development and environmental conservation be kept in balance, so that the benefits of development are not negated by the costs of environmental damage.

662. There are many dimensions to the environmental problem. They include increases in the amount of pollutants released into the environment; rapid exploitation of land and natural resources without due regard to ecosystem conservation; and growing congestion in urban areas with the attendant problems of transportation, waste disposal, provision of utilities and noise and visual pollution. Socio-psychological traumas affecting migrants from the rural areas as a result of increasing urbanization also pose specific planning problems in the social and working environment of large urban areas. In addition, environmental problems associated with the squalor of poverty, inadequate housing and utilities, poor health and social services require specific attention.

663. The Environmental Quality Act was passed in 1974 and the Department of the Environment now in the Ministry of Science, Technology and the Environment was established in 1975. Environmental issues have not been neglected in the past. They have been implicitly taken into account in the planning and implementation of Government's development programmes and projects, for example, in the selection of land for agricultural development and the formulation of conservation enactments relating to soil, water, land, forest and mining. However, more explicit attention will need to be given to the management of the environment as economic development progresses. This Chapter examines the environmental effects of development and the required policies and programmes for environmental management and protection as well as the enforcement of the required legislation.

## **II. NATIONAL ENVIRONMENTAL POLICY**

664. Malaysia's overall environmental policy will take account of the following factors:

- (i) the impact that population growth and man's activities in resource development, industrialization and urbanization have on the environment;
- (ii) the critical importance of maintaining the quality of the environment relative to the needs of the population, particularly in regard to the productive capacity of the country's land resources in agriculture, forestry, fisheries and water;
- (iii) the need to maintain a healthy environment for human habitation;
- (iv) the need to preserve the country's unique and diverse natural heritage, all of which contribute to the quality of life; and
- (v) the interdependence of social, cultural, economic, biological and physical factors in determining the ecology of man.

The ultimate aim of the Federal Government working in close co-operation with the State Governments is to ensure as far as possible that all man's activities are in balance with his environment. In the attainment of these objectives, the Government recognizes the need to balance the goals for economic and social development, on the one hand, against those for maintaining sound environmental conditions, through the conduct of regular environment impact assessment studies which will seek to quantify the relevant trade-offs.

## **III. CURRENT ENVIRONMENTAL PROBLEMS**

665. Current environmental problems may be divided into two groups, namely, those arising as a result of development of Malaysia's land and natural resources and those arising through the discharge of undesirable waste products or effluents into the environment. The major activities in land and natural resource development which affect the environment are mining, new agricultural settlement, replanting of existing agricultural lands, logging and urban and general infrastructure development. The practice of shifting cultivation throughout the country, especially in Sarawak, also poses serious problems of soil erosion. These activities affect the environment in broadly similar ways, through the reduction of the potential for productive forestry and wildlife, soil erosion, siltation of rivers and the alteration of existing stable hydrological regimes. These in turn give rise to the needs for flood control, regulation of stream flows and purification of water supplies.

666. These are well understood consequences of development arising from disruption of the natural forest cover. Such changes are to some extent inevitable if development is to proceed. The task of policy is to ensure that in the process of development, the capability of the environment to support man's needs is preserved, if not enhanced and that undesirable changes which occur are contained at reasonable costs relative to benefits. As such disruption of the natural ecology is not necessarily retrogressive.

667. One particular facet of the environmental problem which is already of consequence is the adverse effects brought about by perennial and recurring floods in the country. Apart from direct losses sustained during a flood and the costs incurred to repair the resultant damage, there are also indirect losses which result from a disruption of economic activity or a diversion of manpower and other ancillary resources to undertake flood relief operations.

668. A large proportion of the population live in valleys and river basins which are flood-prone. Recognizing the need to alleviate the hardship and to improve the living conditions for these people, the Government has embarked on a wide range of engineering, non-engineering and legislative measures, both on a short and long-term basis, to overcome the flood problem systematically.

669. It is pertinent to note that while effective flood control can be achieved, the toll of flood losses may well continue to increase if the areas subject to flooding and flood hazards are developed and utilized indiscriminately. In these circumstances, the effects of flood control measures are nullified by unwise land use, which in turn aggravates the flooding situation.

670. An integrated approach and awareness of the flood element as a natural phenomena in land use development projects and planning is necessary. To the extent that floods are caused by natural phenomena and therefore cannot be prevented, it is imperative that planning for settlements and land use take this factor into account to minimize the extent of the damage and adverse effects likely to be caused in the event of a flood occurring. This is particularly necessary in the case of the larger river basins with flood-prone areas.

671. A second important consequence arising from land and resource development is the steady depletion of natural forest habitats which are essential for the preservation of wildlife and natural flora, and the diminishing availability of natural scenic areas with recreational potential. The loss of genetic materials contained in the thousands of species of organisms living in the forests which may be of potential importance for plant breeding and the control of pests and diseases in agriculture and forestry also requires attention. It is important to recognize that because of the complex interdependence between the very numerous organisms living in the natural forests, once destroyed the natural conditions cannot be recreated. The preservation of representative samples of Malaysia's natural forest ecosystems with its constituent flora and fauna is therefore particularly important. They are not only part of the national heritage but are also part of the world heritage.

672. Another important environmental problem is pollution. Industrialization in Malaysia has been achieved so far without serious and far-reaching environmental problems. The establishment of light industries and assembly plants has not caused significant *air pollution*. Heavy industries including

chemical plants, thermal power stations and petroleum refineries are so far not concentrated in any one area with the result that they have not been a major source of pollution. Moreover, climatic conditions in the country do not lead to widespread and prolonged spells of atmospheric pollution. Currently, dust and fumes from quarries and cement plants, the incineration of waste and fumes from traffic in dense urban areas are probably the most serious sources of air pollution. They sometimes reach levels hazardous to health.

673. *Water pollution* is a more widespread and serious problem. The major sources of pollutants in inland waters are: sewerage and domestic waste waters from populated areas; effluent discharges from agro-industries, particularly palm oil and rubber processing factories; industrial effluents; silt from mining ponds, land clearing and urban and highway development; and the use of agricultural chemicals, including both pesticides and fertilizers.

674. Pollution of coastal waters is also becoming more significant. In coastal areas, port activities and rapidly expanding waterfront industries, including the establishment of major naval facilities and shipyards, are potential sources of pollution which may significantly affect inshore fisheries. In the Straits of Malacca, the potential for disastrous spills from oil tankers due to accidents is very real. Discharges of ballast and slop from tankers have been observed while dumping of industrial wastes containing toxic residues have also been reported. Already fish catches in the Straits of Malacca are declining, although this may also be due to overfishing. In this regard, the effects of industrial and port development in Port Klang, the Dindings estuary and Penang on the fishing industry, potential aquaculture projects and recreation will need to be monitored.

675. *Noise and visual pollution* also require attention. Apart from the effects of noise pollution on health in industrial establishments—a problem which can be contained by enforcement of industrial and health regulations—noise and visual pollution in the general environment are increasingly serious problems. Effective town and country planning will have an important role to play in this respect.

#### **IV. ENVIRONMENTAL OBJECTIVES**

676. Environmental policies will be pragmatic. In the opening up of undeveloped land and forest resources, every effort will be made for the preservation of representative ecological systems. In the planning of industrial and urban growth, provision will be made to minimize the undesirable consequences of congestion and environmental pollution.

##### **Resource management and ecosystem preservation**

677. The natural resource-based sectors form a major part of Malaysia's economy. A primary concern of resource management will be to maintain the productive capacity of the country's renewable natural resources through

the application of sound policies for soil, water and forest conservation; to rehabilitate and develop alternative uses for worked-out mining land; and to facilitate wildlife and ecosystem preservation, through the establishment of natural reserves for the purpose, and the enforcement of legislation.

678. The renewable resources of Malaysia which are actively being utilized are its land, forests and water. Malaysia has a good record for sound management of these resources. Provisions for the conservation of soil, water and forest under several enactments dealing with the use and exploitation of natural resources as well as the use of sound cultivation, cropping and conservation techniques have in general resulted in minimal impairment of the potential of these resources.

679. A perspective of the country's natural resources is provided by the Land Capability Classification Survey carried out under the First Malaysia Plan and further elaborated during the Second Malaysia Plan. Together with the completion of the Forest Industries Development Project and the Sabah Forestry Inventory, the information necessary for effective planning of the forest resources of the country has now been significantly extended.

680. Under the TMP, hydrological surveys will continue to be undertaken by the Drainage and Irrigation Department (DID) with respect to surface water and the Geological Survey Department in respect of groundwater. Existing forest inventories and information on land use and soil characteristics will be widened. Finally, comprehensive river basin studies undertaken by the DID for the Pahang, Trengganu and Kelantan river basins will be particularly important in planning development in these areas in respect of multiple water use and flood control.

681. Estimates of land utilization as of 1973, as shown in Table 11-1 indicate that more than 50% of Malaysia is still under virgin forests. There is thus considerable potential for resource development as well as ecosystem conservation.

TABLE 11-1

MALAYSIA: LAND USE, 1973

(million acres)

	<i>Peninsular Malaysia</i>	<i>Sabah</i>	<i>Sarawak</i>	<i>Total</i>
Total area ... ..	32.5	17.8	30.7	81.0
Total developed area <sup>1</sup> ... ..	9.2	2.6	6.7	18.5
Total forest area ... ..	23.3	15.2	24.0	62.5
Logged and disturbed forest ... ..	11.8	3.7	3.0 <sup>2</sup>	18.5
Virgin forest ... ..	11.5	11.5	21.0	44.0

<sup>1</sup> Includes all land cleared of forests except regrowth after shifting cultivation and includes agriculture, mining, urban and associated infrastructure.

<sup>2</sup> Estimated—accurate forest survey data not available.

#### **Research into land use and management**

682. In order to enhance the capability of the country's land resources for sustained production, land use research and management will be emphasized. At the same time, improved techniques for soil management will be propagated to reduce the undesirable environmental effects of erosion and loss of soil structure. The development of these techniques will also help to bring into production areas hitherto regarded as marginal or unsuitable for agriculture.

#### **Forestry**

683. As agricultural development diminishes the availability of lowland forest areas, logging will progressively expand into hill forests. Research on forest management and logging systems which minimize erosion problems and on forest utilization leading to more effective use of commercially less desirable species will all be important if the forest resources of the country are to be fully utilized in ways which are consistent with sustained yield management and conservation. The incorporation of a larger variety of species in regenerated forests will also be promoted for purposes of genetic conservation.

#### **Wildlife management**

684. In view of the declining acreage under forests, emphasis will be given to multi-use forest management for wildlife as well as timber production. This will require strict enforcement of the laws on wildlife protection and the prohibition of hunting within forest reserves as provided for in the forest enactments. In addition, research will be undertaken in forestry and wildlife management so that compatible management systems can be devised. The goal is to ensure that as far as possible breeding populations of all known species can be maintained in a natural state within the forests of the nation.

#### **Ecosystem conservation**

685. A great variety of forest systems exists in the country due to differences in climate, topography, geology, soils, geographical region and man-induced influences. Geographically, the forests in the northwest of Peninsular Malaysia with elements of Thai/Burmese flora differ from those of the southeast which have Borneon elements. The forests of Sabah and Sarawak also differ in composition from those of Peninsular Malaysia.

686. The existing national parks, although large, are not able to preserve the wide range of differences existing in the country. To ensure that the diversity of ecosystems is effectively conserved, a survey will be carried out during the Plan period to provide the basis for the establishment of a system of national parks, nature reserves, wildlife sanctuaries and virgin jungle reserves.

687. Those features of Malaysia's landscape which reflect its natural beauty will be preserved for recreation and tourism. Some of the areas with such potential include limestone outcrops such as Gunong Tempurong and Gunong Rapat around Ipoh, Bukit Takun and Batu Caves near Kuala Lumpur and the Langkawi Islands; the quartz dyke on either side of Klang Gates; and the combination of headlands and coastal hill forests in Muka Head in Penang, Cape Rachado, Lumut and Segari north of the Dindings estuary. Several of these areas with important landscape and floristic components have potentials for recreational-type national parks. In Penang, Port Dickson and on the East Coast of Peninsular Malaysia, developments along the entire length of the beaches should be managed in such manner that their landscape and recreational potential will not be impaired. Continued attention will also be given to the preservation and rehabilitation of important historical and archaeological sites such as the Niah Caves in Sarawak and Merbok in Kedah.

TABLE 11-2

PENINSULAR MALAYSIA: EXISTING NATIONAL PARKS,  
NATURE RESERVES, NATURE MONUMENTS AND WILDLIFE  
SANCTUARIES

<i>State</i>	<i>Reserve or park</i>	<i>Approximate area (acres)</i>
Perak ... ..	Chior Game Reserve ... ..	10,700
	Sungkai Game Reserve ... ..	6,000
	Batu Gajah Bird Sanctuary ... ..	11
Pahang ... ..	Krau Game Reserve ... ..	136,000
	Fraser's Hill Wildlife Reserve (Contiguous with Wildlife Reserve in Selangor) ... ..	2,500
	Cameron Highlands Wildlife Reserve ... ..	176,000
	Pahang Tua Bird Sanctuary ... ..	3,300
Johor ... ..	Segamat Wildlife Sanctuary <sup>3</sup> ... ..	77,000
	Endau-Kluang Wildlife Reserve ... ..	250,000
	Endau-Kota Tinggi (W) Wildlife Reserve ... ..	199,000
	Endau-Kota Tinggi (E) Wildlife Reserve ... ..	46,000
	Pulau Lima Islands Bird Sanctuary ... ..	5
Negri Sembilan ... ..	Port Dickson Islands Bird Sanctuary ... ..	1
Selangor ... ..	Fraser's Hill Wildlife Reserve ... ..	7,360
	Kuala Selangor Wildlife Reserve ... ..	108
	Bukit Kutu Wildlife Reserve ... ..	4,800
	Klang Gates Wildlife Reserve ... ..	322
	Bt. Sungai Puteh <sup>3</sup> ... ..	99
	Kuala Lumpur Golf Course (Bird Sanctuary) ... ..	996
	Bt. Nanas Forest Reserve ... ..	40
	Templer Park Nature Reserve ... ..	3,000
Sungai Dusun Game Sanctuary ... ..	10,700	
Pahang, Kelantan, Treng- ganu ... ..	Taman Negara ... ..	1,140,000

<sup>3</sup> No longer effective.

TABLE 11-3

PENINSULAR MALAYSIA: PROPOSED NATIONAL PARKS,  
NATURE RESERVES, NATURE MONUMENTS AND WILDLIFE  
SANCTUARIES

<i>State</i>	<i>Reserve or park</i>	<i>Approximate area (acres)</i>
Perak ... ..	Belum Wildlife Reserve ... ..	531,000
	Grik Wildlife Reserve ... ..	168,000
	Segari Wildlife Reserve ... ..	3,450
	Selama Wildlife Sanctuary ... ..	55,000
	Kuala Gula Bird Sanctuary ... ..	2,200
	Gunong Tempurong Nature Monument ... ..	3,000
Selangor ... ..	Batu Caves Nature Monument ... ..	385
	Templer Park Nature Monument ... ..	7,500
	Kuala Selangor Nature Monument ... ..	1,400
Negri Sembilan ... ..	Pasoh IBP Research Reserve ... ..	6,000
Johor ... ..	Mersing Nature Monument ... ..	46,000
	Padang Mulud Nature Reserve ... ..	5,320
	Johor State (Gunong Blumut) National Park <sup>4</sup> ... ..	128,000
Johor-Pahang ... ..	Taman Endau-Rompin National Park <sup>4</sup> ... ..	500,000
Pahang ... ..	Tasek Bera Nature Reserve ... ..	82,000
	Menchali Nature Reserve ... ..	1,000
	Tasek Chini Nature Reserve ... ..	12,000
Trengganu ... ..	Ulu Trengganu Wildlife Reserve ... ..	288,000
	Dungun Turtle Sanctuary ... ..	800
	Trengganu Bird Sanctuary ... ..	730
Kedah ... ..	Ulu Muda Wildlife Reserve ... ..	285,000
Penang ... ..	Batu Feringghi Wildlife Reserve ... ..	3,620
Kelantan ... ..	Sungai Nenggiri Wildlife Reserve ... ..	91,000

<sup>4</sup> These are designed to be multiple-use national parks with logging restricted to designated areas.

#### Environmental pollution control

688. Measures for controlling environmental pollution are provided in the Environmental Quality Act which was passed by Parliament in 1974. The Department of the Environment within the Ministry of Science, Technology and the Environment working closely with relevant Government agencies will be responsible for implementing the provisions of the Act and overseeing management of the environment generally. Selective environmental control programmes will be implemented during the Plan period, focusing on the following priority areas.



### **Pollution monitoring**

689. Fundamental to the control of environmental pollution is the determination of base-line levels for specific pollutants and the monitoring of ambient levels. These call for continuous monitoring of both atmospheric and water pollution in large urban conurbations as well as areas subject to known sources of pollution, for example, from cement factories and rivers known to be receiving or likely to receive harmful effluents. Specific pollutants to be monitored include carbon monoxide, sulphur dioxide, nitrogen oxides, particulates in the atmosphere, silt from mining, effluents from oil palm, rubber and other agro-processing industries, pesticides and toxic elements from industrial sources. Coastal waters including marine life will also be monitored in view of oil spills and discharges of sewerage, urban waste and toxic industrial effluents.

### **Contingency plan for oil pollution**

690. In view of heavy tanker traffic in the Straits of Malacca, a contingency plan for dealing with oil pollution arising from accidents will be given priority. The plan will be co-ordinated by the Department of the Environment and will involve related Government agencies together with the assistance of private oil companies. Following the "Showa Maru" oil spill, the Government has initiated negotiations with the Japanese Government regarding compensation for the accident. The losses and costs arising therefrom are clear indications of the importance which must be given to avoiding such incidents in the future.

### **Machinery for pollution control**

691. An important means for controlling industrial pollution is the dispersal of industries away from large urban conurbations. Such dispersal will obviate concentration of pollution in any single region and reduce planning problems due to congestion. The Department of the Environment will examine the use of licences, fines and charges for effluent disposal.

## **V. ENVIRONMENTAL IMPACT ASSESSMENT**

692. In the evaluation of all relevant projects, an assessment of the overall impact of these projects on the environment will be undertaken. Ministries and Departments as well as the private sector will be required, before embarking on the implementation of such projects, to identify all likely environmental effects as well as the means to be taken to counter them. These assessments will be taken into account in the final design and implementation of the projects but bearing in mind that the adoption of environmental protection measures will need always to be in balance with development costs.

## **VI. ENVIRONMENTAL EDUCATION**

693. Effective management of the environment requires not only technical capability but also full awareness on the part of the population at large as to the measures required for the purpose. The mass media and educational institutions will be used to stimulate awareness among the general public of the importance of environmental conservation and the social and economic *rationale* affecting decisions on environmental issues. At the same time, technical training for personnel involved in environmental management, scientific analysis of natural resource management and the economics of the environment will be expanded.

## **VII. CONCLUSION**

694. Problems concerning the environment will be given specific consideration in the process of development while the capability and machinery for dealing with these problems will be progressively developed during the Plan period. The purpose of this Chapter has been to focus attention on the environmental problems arising from development and the several measures which would be developed to overcome them. While industrial and urban development have not reached such a stage as to pose major environmental problems, it will be Government's policy to ensure that, in the process of development, undesirable environmental consequences are minimized and early remedial action is taken to avoid prohibitive curative costs in the future. In the use of the nation's renewable natural resources, Government policies will seek to ensure sustained yield management and the preservation of basic options in resource use through the maintenance of ecosystem reserves.