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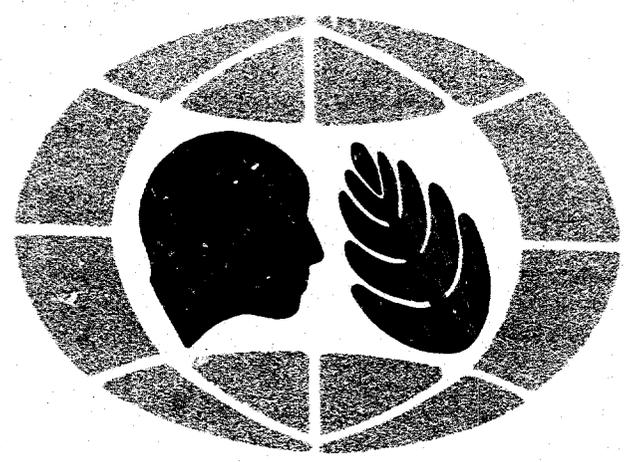
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LEGAL REGULATORY AND INSTITUTIONAL ASPECTS OF
ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT
IN DEVELOPING COUNTRIES

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A COUNTRY STUDY OF MALAYSIA



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LEGAL, REGULATORY AND INSTITUTIONAL ASPECTS OF
ENVIRONMENTAL AND NATURAL RESOURCES MANAGEMENT
IN MALAYSIA

May, 1981

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LEGAL, REGULATORY AND INSTITUTIONAL ASPECTS
OF ENVIRONMENTAL AND NATURAL RESOURCES
MANAGEMENT IN MALAYSIA

CHAPTER ONE

General Overview

I. The constitutional monarchy of Malaysia is composed of thirteen states: Sarawak and Sabah in East Malaysia, and the Peninsular Malaysian states of Johor, Kedah, Kelantan, Malacca, Negri Sembilan, Pahang, Perak, Perlis, Penang, Selangor and Terengganu. The Capital, Kuala Lumpur, encompassing some ninety-four square miles, has been designated the Federal Territory of Malaysia.

The country's economy is booming. GNP now stands at over \$12 billion (US) and is growing at an annual rate of 8%. The country's overall balance of payments situation shows a healthy surplus of almost half a billion dollars per year. And while population is growing at 2.68% annually, per capita GNP rose from \$1,480 (US) in 1979 to \$1,667 (US) in 1980. Given these statistics, one can get very bullish over Malaysia's economic future, particularly when the country is richly endowed with natural resources and is the world's leading producer of such commodities as: rubber, tin, timber, and palm oil.

Peninsular Malaysia

Peninsular Malaysia comprises some 50,700 square miles. A large mountain chain forms one backbone of the peninsula and contains the Gunong Korbu Peak in the Cameron Highlands. Rising to the east of this main chain of mountains and separated from it by valleys is a second mountain highland that contains the highest elevation in Peninsular Malaysia,

the skullcap of Gunong Tahan (7168 feet). The land is lanced throughout by several major watercourses, the most important being the Pahang River.

Sarawak and Sabah

The two eastern states of Sabah and Sarawak in the northern part of Borneo are about one and a half times the size of the peninsula. Given its hot, humid climate, East Malaysia is a land of lush tropical plant life. The forested area approaches nearly 90% of the total land area. The rain forest is made up of towering trees - usually hardwoods - about 100 feet high, which form dense canopies that can keep the forest floor in perpetual shade.

II. Natural Resource Base

Malaysia with its vast array of natural resources could easily be among the world's leading store of resources. Its impressive natural resource base is not only rich in numbers but in diversity as well and continues to play an important role in the country's burgeoning economy.

1. Mineral Resources

Tin

Malaysian tin deposits are among the world's richest. The discovery of abundant deposits in Perak and Selangor in the 19th century and the influx of inexpensive Chinese labor led to the rapid development of this industry. Roads and railroads were constructed by the British to link the tin mines with seaports. Thus, by the turn of the century, all of the important mining towns - Taiping, Ipoh, Kuala Lumpur and Seremban - were linked by railroad to the sea. Malaysia produces 30% of the world's tin and plays an active role in the International Tin Council (ITC).

Petroleum

During the past decade, the petroleum industry in the two eastern states and the east coast of Peninsular Malaysia has undergone a major expansion, with total production of crude oil standing at 275,000 barrels per day in 1980. This figure represents a slight (3%) decline over 1979 figures and is in response to the government's National Oil Depletion Policy, designed to sustain the present level of production throughout the Fourth Malaysia Plan (1981-1986). Most of Malaysia's petroleum requirements are met by three refineries - two in Port Dickson and one in Lutong. Because of the growing importance of petroleum in Malaysia's economy, a Petroleum Development Act was passed in 1974, when the National Petroleum Corporation (Petronas) was created. Ownership, the right to explore and exploit petroleum reserves in Malaysia as well as the sole marketing rights and authority to issue management shares is vested in Petronas.

In addition to petroleum, Petronas has expanded the production of natural gas from Sarawak and liquified natural gas is now being produced in that state.

Other mineral resources in Malaysia include iron ore deposits, a poor grade of coal, a little gold, some tungsten and a substantial output of bauxite. Also, Sabah contains a large deposit of copper with reserves estimated at 77 million tons of ore.

2. Agricultural Products

Palm Oil

Malaysia has become a major producer and exporter of palm oil, an edible vegetable oil used in the manufacture of many products, including soap and margarine. Palm oil has now replaced rubber as

Malaysia's leading export. Production is in the order of two million tons, and close to two million acres have been set aside for this activity. During the first six months of 1980 palm oil production increased by 25%, bringing Malaysia's share of world production up to 57%.

Rubber

Malaysian rubber accounts for 40.3% of the total world production, grossing about M\$4500 million for the Malaysian economy. In order to strengthen the position of natural rubber on the world market, the government in 1965 established a uniform grade of rubber - Standard Malaysian Rubber (SMR) - to eliminate production malpractices and improve quality. The Rubber Research Institute of Malaysia (RRIM), the largest single crop institute in the world, has greatly assisted the overall effort to improve the quality of natural rubber. New high-yield clones have been developed and rubber yields have increased fivefold. Further, increased petroleum costs, an important factor in the production of synthetic rubber, have thereby enhanced the competitive edge of natural rubber.

Apart from these major agricultural products there are other products such as cocoa, pepper, pineapple and coconut which, together, are beginning to play an important role in domestic production.

3. Forest Products

Malaysia has a rich diversity of forest resources (over 2,000 species of trees) with the forests in the peninsula largely different from the rich, virgin forests of Sabah and Sarawak. A relatively large proportion of these lush forests, 44% according to the Third Malaysian Plan, remain untouched. Timber remains a valuable export for Malaysia.

About half of the sawlog production is derived from Peninsular Malaysia and the other half from Sabah and Sarawak. In the peninsula, logs are processed into sawn timber and other wood products. In Sabah and Sarawak, supply far exceeds demand and the logs are merely exported. Because of the recent, rapid expansion of the timber industry, the government has placed great emphasis on a reforestation program. As a conservation measure, only one twenty-fifth of the forest land in the country can be granted by the government each year for lumbering. Consequently, sawlog production decreased by 6.5% in 1980, although sawn timber production was expected to increase by 5.7%.

4. Fishery

Over 1,000 species of fish are to be found in Malaysian waters. Over 250 species are used for food, although only 20 species constitute the major market. Fish provide some 75 percent of the animal protein consumed in Malaysia. About three quarters of the fish are taken from the Strait of Malacca.

5. Wildlife

Malaysia teems with wildlife, over 200 species of mammals and nearly 500 species of birds. Wild elephants, Malayan tigers, deer, tapir, wild cattle, wild pigs, etc., roam the forest floor. The trees are alive with monkeys, wildcats, huge pythons and brightly plumed birds. Crocodiles, lizards, and snakes are common to the rivers and swamp areas.

III. The People

One of the most significant influences on Malaysian decision-making is the ethnic make-up of the country's population. At present, half the

population is Malay, 36% are Chinese, 10% are Indian, and the rest are indigenous tribal peoples. The mostly organized Chinese have managed to control an outside portion of the wealth of the country. On the other hand, the Malays tend to be highly agrarian and have had little economic power.

The Third Malaysia Plan notes that Malays and Malay interests own only 2.4% of the country's capital assets, Indians own 1.1%, the Chinese community owns 27.2%, others 6%, and foreign investors 63.3%. However, in the noncorporate sector of agriculture, Malays own 47.1%, the Chinese 32.8%, Indians 10.1%, others 4.1% and foreigners only 5.9%.

Given this disproportionate structuring of the economy, Malaysia's new economic policy strives not only to relieve poverty, but, where possible, to redirect wealth into Malay hands.

CHAPTER TWO

Environmental and Natural Resource Problems in Malaysia

The Third Malaysian Plan (TMP) divided Malaysia's environmental problems into two broad categories: those arising from the development of land and other natural resources, and those arising from the discharge of wastes into the environment.

As the Government implements the Fourth Malaysia Plan, the environmental effects of the first three plans are becoming increasingly visible. Forest land is disappearing with resultant soil erosion, siltation, sedimentation and flooding. Mining and quarrying have produced wastes and have contributed to the erosion problem. Rivers have become rife with industrial waste and palm oil effluent. Raw sewage from the rapidly expanding urban areas has polluted Malaysia's beaches. Oil sludge is creating a problem in the once-sparkling waters of the Strait of Malacca. A pollutant-laden haze rises over the bustling traffic arteries. It is no doubt that these disquieting facts are increasingly becoming the preoccupation not only of various sections of the population but of development planners as well.

1. Deforestation

Logging, particularly in East Malaysia, has not only contributed to soil erosion, but has begun to make inroads into the great forests. The world demand for timber has led to a vastly increased utilization of the great forests. Also, in the rapid drive to increase agricultural production, forest land is giving way to agricultural production. The activities of FELDA, the Federal Land Development Authority, which opens vast tracts of forest areas for agricultural production is a good example. A World Bank estimate has stated that if unchecked, the continued destruction of the rain forest through land development schemes will

convert all forest land suitable for agriculture within three decades. Production of forest resources is another major culprit which is causing problems of soil erosion, increased flood hazards, deterioration of water quality, the disruption of marine systems by sediments carried offshore and growing threats to various flora and fauna. The Government Economic Report for 1980/81 claims that forest production is to increase by 6% during the next phase of the development plan.

2. Water Pollution - Agro-industrial Wastes, Industrial Wastes, Sewage and Mining Effluents

In 1980, the two largest sources of water pollution were the palm oil and rubber industries. These two industries combined produced enough effluent to approximately equal the total municipal sewage of the entire peninsula. And because of Malaysia's leading role in world production of palm oil and rubber, waste treatment technology had to be developed indigenously - a slow process which has been costly, not only in technological terms but in terms of environmental degradation as well.

Other important water pollution sources are municipal sewage and industrial effluents, discharges from the mining industries and other agro-industrial processes.

3. Soil Erosion

As development takes place, as the land development schemes, the enhanced

timbering operations, the agricultural development activities, etc., gather momentum, soil erosion becomes a natural undesirable by-product. And, as contrasted with many other countries in Southeast Asia, Malaysia is experiencing an enormous development boom.

The first two Malaysia Plans (1966-1975) called for the development of over half a million hectares of land for agriculture. FELDA was charged with the responsibility for carrying out this ambitious program which was focused largely on the development of oil palm and rubber crops. Soil erosion from rubber cropping has become apparent. Even with the abandonment of clean weeding between rubber stands in 1930, lack of an adequate groundcover causes a serious problem when one views the relatively low percentage of total rainfall interrupted by rubber plantings. And, improper terracing without adequate vegetation cover often leads to the collapse of retaining walls and the removal of soil from the steep frontal lips. Millions of tons of soil are washed away annually as a result of these practices.

4. Coastal Zone and Marine Pollution - Oil Pollution

The routine pumping of bilges by vessels using the Strait of Malacca, dumping of industrial waste, and the discharge of municipal sewerage have combined to badly pollute a great waterway. Further, given the ever increasing supertanker and larger ore carrier traffic in the Strait today, the confined sealanes, the bustling local traffic and the configuration of the Strait itself, all the ingredients for a calamity of major proportions are at hand. The effect of a substantial oil spill upon the people of the three littoral states which, taken together, define the Straits of Malacca and Singapore would be almost incalculable in terms of marine pollution and the resultant protein loss, employ-

ment in the fishing industry, and destruction of the natural beauty of this historic marine avenue.

5. Air and Noise Pollution

As Malaysia develops further, rapid urbanization and industrialization have created substantial air pollution as well as noise problems. The problem is particularly acute in a tropical country like Malaysia where the climate requires open windows and where there has been little zoning to separate industrial sites from residential areas. While at the present time air pollution complaints amount to some 200 per year, noise pollution only draws about 20 per year. Noise pollution is particularly acute in industrial areas.

6. Pesticides and Fertilizers

In addition to the foregoing which are closely intertwined with the development process and management of natural resources, the impact of other problems, mainly pollution problems are beginning to be felt. Pesticide and fertilizer pollution is an example. The potential magnitude of the threat posed can be gained from the rapid growth in the agriculture sector. The Government has reported that total domestic requirement of fertilizers for 1980 was 860,000 tons, an increase of 7.5% over the 1979 figures. Out of these, about 165,000 tons was locally produced. Figures for recent pesticides use were not readily available, although it is stated that FELDA routinely applies herbicides, which account for about 80% of the country's pest control. 1973 figures for pesticides imports stand at over 200,000 tons. Local groups have given numerous examples which purport to link diseases with pesticides use, e.g. the MUDA Irrigation Project in Kuala Kedah, where the Consumers' Association of Perrang reported a widespread incidence of body sores among workers.

7. Environmental Controversies

During the past decade, environmentally concerned NGOs have succeeded in arousing the Malaysian public to important issues of the moment. Within a broad spectrum of development activities being questioned by the NGOs, the Endau-Rompin National Park and the Batu Caves controversies created a particularly high degree of involvement by an increasingly knowledgeable public.

The most well-known controversy involves logging at Endau-Rompin where the Federal Government had set aside a vast reserve for the protection of wildlife and the creation of a national park. The state government of Pahang, claiming that it places human welfare above animal survival, proposed to issue logging licenses for 30,000 acres in the proposed park. This prompted a major campaign to be mounted by NGOs and interested citizens. There were frequent newspaper articles featuring the environmentally harmful effects of logging in the park as well as the state government's stand on the issue. Eventually, it was decided to limit the number to 12,000 acres. While it is merely speculative to attribute this decision entirely to the citizens' action it is a good illustration of the conflicting demands on land, and the extent of citizen's interest in these issues.

The continuing saga of the Batu caves perhaps highlights best of all some of the major issues at stake which render the resolution of so-called environmental conflicts almost insoluble. The importance of the Batu caves from a historical, religious, cultural and ecological point of view cannot be overemphasized. At the same time, these huge limestone hills are an important economic resource for some quarrying companies and a source of employment for local people. Dust pollution from the quarries has become a major problem. The blasting had also begun to weaken the Hindu shrine in the caves. A public outcry succeeded in

eliciting a pledge from the quarrying companies to stop blasting but neither the Selangor State Government (which issued the quarrying licenses) nor the federal government (which regulates air pollution and stated its intention, as far back as 1975, to establish the Batu Caves as a National Park) have been able to curtail the activities of these companies. Although the blasting has ceased, this is only temporary while the companies await state decision on the duration of their leases. Meanwhile, the ground around the caves still shakes from work taking place nearby and dust arises everywhere.

CHAPTER THREE

Environmental and Natural Resources Management Policy in Malaysia

Malaysia is one of the few countries in the Third World which has adopted an environmental policy as a component of its development strategy. Malaysia's overall development policy is contained in the long-term development framework found in the New Economic Policy (NEP). It is upon this policy that the individual phases of the development plans have been based. The two key elements of the NEP are the eradication of poverty and the restructuring of society. While the eradication of poverty itself can be construed as an environmental goal, one need not resort to interpretations to find implications of environmental quality. In the Third Malaysia Plan, (TMP) 1975-1980, an entire chapter is devoted to environmental policy. Although the Fourth Malaysia Plan will be in effect by the time this report is published, the TMP will not be obsolete. A description of the policy objectives in the TMP is necessary if a thorough assessment of environmental policy and programs to the present date is to be made. Hence, although the mid-term review of the TMP (1978) and the salient features of the FMP (as presented to Parliament by the Prime Minister on March 27, 1981) are silent on the environmental components of the plan, it is still safe to say that environmental considerations had an important role to play at the plan's inception. Also, it was the first time that this subject had been given detailed treatment in such an important national document.

The National Environmental Policy in the TMP was prepared at a time when many of the environmental consequences of rapid development had begun to manifest themselves. Thus, the introductory chapter recognizes the significant increases in pollutants which would be released into the environment as a result of the rapid exploitation of land, the growing congestion in urban areas and the growth

of manufacturing industries. Also, the country had experienced the environmental effects of agricultural development, because the first massive land development scheme (the World Bank-supported Jengka Triangle Scheme) was almost five years old at the beginning of the TMP. The Government combined these experiences with anticipation of even more extensive demands on land and other natural resources to produce an ambitious policy which places heavy emphasis on pollution control and natural resources management. The plan emphasises the need to balance economic and social development with the maintenance of sound environmental conditions. These major policies are embodied in the five main objectives of environmental quality in the TMP. These are:

1. Natural resource and ecosystem management
2. Research into land use and management
3. Forestry management
4. Wildlife management
5. Environmental pollution control, e.g., pollution monitoring, contingency planning, machinery for pollution control, etc.

More specifically, the Policy proposes the establishment of an Environmental Impact Assessment procedure "which will seek to quantify relevant trade-offs . . . bearing in mind that the adoption of environmental protection measures will need always to be in balance with development costs" as well as the establishment of 23 additional National Parks (including the Batu Caves).

An evaluation of achievements in the environmental field during the TMP period and a comparison with achievements in the other sectors (overall economic productivity, etc.) illustrates how ambitious these goals were. Despite fact that the pending proposals for EIA are couched in terms which imply that the process would, or should not, interfere with the project development process, no EIA procedure had been adopted by the beginning of the FMP. Neither had

the Batu caves area been declared a National Park. However, some achievements in the environmental field have been significant, such as the issuing of the Palm Oil and Rubber Effluent Regulations, the Clean Air Regulations, and the National Forestry Policy. Although these may appear to be small gains when compared with the impressive growth rates in the agriculture, forestry, and fishing sectors (22% of the Gross Domestic Product) during the Third Plan period and although environmental gains to a large extent defy costing in economic terms, they are significant nonetheless.

The fate of the as yet unattained environmental objectives, especially the EIA requirement, is now uncertain, as is the role of overall national environmental policy. As mentioned earlier, the FMP is silent on environmental questions. To date, no official assessment of the environmental policy as set out in the TMP has been conducted. Whether or not this omission signifies the death knell of environmental concerns is a matter of conjecture. The DOE (Division of Environment, Ministry of Science, Technology, and Environment) will continue to function because its mandate originates, not from the policy under the TMP but under the Environmental Quality Act, passed one year prior to the coming into force of the TMP. But, how effectively it will be able to function without the support of a policy framework for environmental management remains an important question, especially if one considers that the concerns which prompted the inclusion of an environmental policy in the TMP still hold true for the FMP. In fact, there is every reason to suspect an exacerbation of some of the major problems because, during the FMP period, additional resources will be devoted to stepping up production, including expansion of the acreage cleared for rubber, palm oil, etc. According to early reports on the Plan, rubber production is expected to expand at 0.7% annually, as compared with 2.3% (actual growth during the past decade), palm oil 8.5%, petroleum 5.3%, manufacturing 11%, etc. Although these figures represent a decline as compared with growth rates during the last decade, they are only projections, and

secondly, they do not detract from the fact that they represent heavy demands on the country's resources and can be taxing on, or even detrimental to, the environment.

CHAPTER FOUR

Overview of Government Structure, Administration and Legal System

Constitutional Base

The constitutional monarchy of Malaysia is a federation consisting of thirteen states headed by the Supreme Sovereign. The constitutional authority for legislative, executive and judicial powers originates from the Constitution of Malaysia which was adopted in 1957. This Constitution provides for: a federal form of government, a cabinet system of administration, an independent judiciary, fundamental liberties and a bill of rights, authorities of federal and state governments, federal and state relations and public services.

The Constitution sets out three types of legislative jurisdiction; federal, state, and concurrent. Under the combined effect of Articles 74 and 80 the federal government's legislative and executive authority extends to those subjects itemized in the Federal and Concurrent Lists (in the Ninth Schedule of the Constitution). The Federal List includes a wide-ranging group of subjects, from external affairs, industry, public works, scientific and technical research, to education and public health. The Concurrent List applies to those subjects which either the State or Federal governments may regulate, provided that, in the case of conflict, federal law takes precedence (Article 75). Items in this List include soil conservation, disease prevention, national parks and the protection of wildlife, town and country planning, etc. Another provision which is designed to entrench Federal authority is Article 81, which provides that the executive authority of the states shall be so exercised as to ensure compliance with Federal law. Further, provision is made in Article 83 for the Federal government to acquire State land for federal purposes and in Article 94 to enable federal powers to be exercised in respect to State subjects. The implications of these provisions for the formulation and implementation of environmental and natural resources management policy and law will be discussed in the next chapter. However, since federal

and state governments operate within the framework of the provisions described above, they deserve some scrutiny at this point.

Federal Government

The federal government comprises inter alia, the Prime Minister and his cabinet, constitutionally created bodies like the National Land Council, the National Finance Council and the National Council for Local Government, and the Public Services.

The Prime Minister is the head of Government, and is responsible for informing the Supreme Head of the Federation of the general administration of the country. General administration is effected through the cabinet. The Prime Minister's Department has become the pivotal unit within the government administration because it coordinates and supervises the implementation of national policy. An important branch of the Prime Minister's Department is the Economic Planning Unit (EPU) which oversees the formulation of overall national development planning. At present, the Cabinet consists of members with portfolios for 20 Ministries, most of which have programs relating to environmental and natural resource issues. Legislation to implement national policy originates from Parliament, the bi-cameral federal legislature.

State Government

Each of the 13 states is governed by its own constitution and legislative assembly. Although each of the state Constitutions differ in detail, broadly speaking they embody the fundamental principles of cabinet government. The ruler of the state acts on advice given by the State Executive Council, or Cabinet in as much the same way as the Supreme Head is advised by the Prime Minister. The head of the State Executive Council is the Chief Minister or the Chief Executive.

Although each of the states in joining the Federation ceded some fundamental

rights to the federal government, as will be seen later, the states still wield a considerable degree of authority and autonomy especially over important natural resources such as land, agriculture, forests, and mining (Article 74 and the State List). Technically, it is possible for the states' control to extend beyond these subjects to those matters in the Concurrent List (for our purposes, national parks and wildlife, drainage and irrigation, town and country planning, etc.) to which the federal authorities have not extended their powers. In addition, each of the states retains a residual authority to regulate and control any matter not specifically referred to in the Constitution (Article 77). In the case of Sabah and Sarawak, which joined the Federation at a later date, it is fair to comment that, as a concession for joining the Federation, more legislative and executive power has been retained by these states than was yielded to the federal government. Evidence of this can be found in the number of legislation and federal policies (e.g. the National Forestry Policy) which do not apply to those two States.

District Governments

At the lower level of government administration are the district and local authorities. Although local government is a state matter under the Federal Constitution, the district governments have become an executive arm of both the Federal and State governments, because they are subject to the coordinating and advisory jurisdiction of the Ministry of Local Government. The District Officer is responsible for general administration and revenue collection. Under the 1976 Local Government Act, state governments are in the process of restructuring their local authorities to transform them into more financially viable units.

Legal System

The Malaysian legal system is a combination of Malay customary law, common law and statutory law. The first set of law is comprised mainly of Muslim law and, as mentioned earlier, is a subject for state control. Common law refers to those principles of law derived from case law and the British common law tradition. With the possible exception of nuisance, none of these common law rules will be of direct relevance for this report. The bulk of the laws to be discussed in this study fall under the third category - enactments and legislation.

Conclusion

The overall effect of the system which has been briefly described above is to create a relatively strong system of state government, especially as far as natural resources management is concerned. As a counterbalance to the states' powers, the federal government is given the powers to initiate overall policy and in certain areas to actually influence the decision-making powers of state governments. These checks and balances, which were thought expedient from a political standpoint have, by their very nature, presented serious obstacles to the effective implementation of a strategy for natural resources which knows no such political boundaries.

CHAPTER FIVEConstitutional and Legal Framework for Environmental
and Natural Resources Management

The Federal system of government described below poses a constitutional problem with regard to law-making and law enforcement to implement environmental policy. Any legislation issues by the Federal or State governments must fall within the confines of the constitutional mandate for legislation, or else infringe Article 4 of the Constitution. Article 74 of the Constitution establishes the legislative competence of Parliament and the State legislatures. Basically, Parliament is empowered to legislate only with regard to matters specified in the Federal list. Similarly, the State legislatures' powers are limited to areas of overlapping responsibility over which either or both legislatures may legislate, provided that, in the case of conflict, Federal law will prevail (Article 75). The relevant environment and natural resources related topics under the Federal, State and Concurrent Lists are described.

**Matters Relevant to Pollution under the
Federal, State, and Concurrent Lists**

List	Item	Matter
Federal	6(e)	Local Government and Town Planning in and water supply to the Federal Territory.
	8	Trade, Commerce, and Industry particularly Item 8(i) relating to industries and regulations of industrial undertakings, and Item 8(k) which deals with factories, boilers, and machinery and dangerous trades.
	9	Shipping, navigation, and fisheries.
	10	Particularly 10(f) which concerns mechanically propelled vehicles and 10(h) which relates to broadcasting and television (microwave health hazard).
	14	Medicine and health.
	20	Control of agricultural pests; protection against such pests; and prevention of plant diseases.
State	2	Land.
	3	Agriculture and forestry.
	4	Local Government outside the Federal Territory including Item 4(b) relating to obnoxious trades and public nuisances within Authority areas and Item 4(c) relating to housing and provision for housing.
	6(c)	Subject to the Federal Laws, concerns water (including water supplies, rivers and canals) and control of silt.
Concurrent	3	Protection of wild animals and wild birds and natural parks.
	5	Town and country planning except in the Federal Territory.
	7	Public health, sanitation, and prevention of diseases.
	8	Drainage and irrigation.
	9	Rehabilitation of mining land and land which has suffered soil erosion.

Source: Hamzah bin Abdul Majid, "Toward Environmental Management: The Malaysian Experience," in Developing Economies and the Environment: The Southeast Asian Experience, MacAndrews, Colin, and Cha Lin Sien, editors. Singapore 1979.

Further, Article 77 provides that any residual matters not specifically mentioned in any of the three Lists will fall within the legislative ambit of the state authorities.

The constitutional provisions described above have serious ramifications for environmental policy formulation and implementation. As can be seen from these Lists the majority of natural resources management issues, and in particular the major concerns of land, water, agriculture and forestry, are under state control. Two important questions come to mind immediately. What mechanisms exist to ensure uniformity or at least harmonization of state laws on these issues? Secondly, as there is no specific reference to overall environmental quality or pollution control in these Lists, is the Federal Government, in issuing the Environmental Quality Act (EQA), stepping beyond the bounds of its constitutional authority? This latter question raises an important topic which deserves thorough examination if the strengths, weaknesses and limitations of the laws and regulations (mainly Federal) discussed in this study are to be understood - Federal/State relations with regard to law enforcement in this field.

First of all, an examination of the constitutional mandate described above shows that the EQA is valid only if it is explained under the narrow pollution issues in the Federal and Concurrent Lists. In fact, the sole authority to promulgate the EQA can be founded on the premise that the subjects dealt with in the Act are sufficiently related to such subjects as industrial undertakings, public health, etc., so as to entitle the Federal Government to issue the law. Secondly, the EQA, no matter how laudable its objectives, and no matter how extensive its authority, is merely an enabling Act which, by no feat of creative statutory interpretation, can be construed to apply to any of

those natural resources issues itemized in the State List. Hence, from the outset, it was recognized that the EQA could not be of direct application in many cases, particularly in the case of such important natural resource management issues as land use, soil conservation, prevention and control of siltation and soil erosion.

Under Article 76, the federal government is empowered to legislate in respect of certain state-controlled subjects but only for the purpose of implementing treaties, promoting uniformity of laws between states or where requested by the state. Any law passed pursuant to this Article does not come into force in any state until it has been adopted by the relevant state legislature. There is also Article 92 which sets out the procedure for the promulgation of national development plans, which may extend to any matter in the State List. Further, under Article 94 of the Constitution, the Federal Government is given certain powers in respect to subject matters under state jurisdiction. However, these powers are limited to executive authority only and are restricted to the conduct of research, the giving of advice and technical assistance to state governments and the provision of education to the inhabitants of any state. The article goes on to stipulate that, with the exception of professional advice given to the agricultural and forestry officers of any state, these powers shall be merely advisory. Consequently, any policy designed to implement any of the objectives of the EQA, as it applies to those subjects under state control can, of necessity, only take the form of a non-statutory method of control. This accounts for the two-pronged strategy which the DOE has adopted to implement the ACT. First, there is the statutory method which is applied to those clear-cut environmental quality matters over which there is little or no debate over the federal governments' competence. The second strategy entails the issuing of "guidelines",

addressed to the state governments, to advise them on methods for dealing with environmental problems associated with development activities in the State List.

To date, guidelines have been issued to cover the following matters:

1. Siting and zoning of industries - adopted by the National Land Council.
2. Soil conservation, prevention and control of soil erosion and siltation.
3. Solid waste management. These guidelines are very comprehensive as they define recommended codes of practice for the disposal of solid wastes on land (selection of disposal sites and land fill development and management), generation, characteristics and handling of solid wastes, and a solid waste and hazardous materials treatment and disposal technology.
4. An environment impact assessment procedure and guideline.

Most of these guidelines are still in draft form and still under consideration by the relevant federal and state bodies. Therefore, it is difficult to project the time it will take for their adoption. Even if all of them become operational immediately, there are reservations about the effectiveness of this modus operandi. While in some instances the federal government has evolved a very effective mechanism to influence state activities, it is unlikely that this plan of action will have the same far-reaching impact as it has had, say, in the forestry sector. In the first place, the DOE is a young agency which does not yet have the experience nor expertise similar to the Forest Department to enable it to exercise a comparable degree of influence. Secondly, in spite of the incorporation of environmental policy into the TMP (and other manifestations of the federal governments' interest in environmental concerns) there is no conclusive evidence that the overall climate at the state level is conducive to effective implementation of this non-statutory method of control. There has been very little federal/state interaction on these issues. However, the

DOE is satisfied with the initial successes it has had and is impressed by activities which indicate a willingness on behalf of state authorities to cooperate. For example, state level environmental committees are being set up which will provide a focal point for the DOE's six regional officers and, on occasion, state governments have requested the DOE's advice.

Despite these examples, a fair comment on the existing constitutional framework is that the situation leaves a lot to be desired. Apart from the main problem of non-enforcement of laws, the division of responsibility between state and federal authorities, with little guidelines on overall environmental and natural resource management goals, poses a risk of the adoption of varying standards nationwide, or no standards at all. This observation is particularly pertinent in the case of those subject areas which fall under state jurisdiction. Here the majority of existing legislation on water, forests, mining, etc., were passed prior to independence. Thus, while these laws may have been adequate to regulate the then prevalent environmental problems, the standards they set have, in most cases been overtaken by environmental concerns arising from increasing demands on natural resources. Also, these early laws were passed at a time when the concept of sustainable development as currently expressed in the National Environmental Policy was not as refined and important a consideration. Hence, environmental standards which were thought to be adequate 50 years ago certainly require revision to meet present day minimum standards. A very good example is the standard for the discharge of mining effluents and overburden into rivers, which call for a minimum standard of the equivalent of 11,000 parts per million of suspended matter, as opposed to the minimum limit of 500 ppm. in the regulations issued under the Palm Oil Regulations, for example. Such

inconsistencies abound not only on a comparison between federal and state regulations but among the states themselves and despite the existence of the National Land Council, even though State governments are obligated to follow any policy formulated by this Council.

To conclude, the legal framework for environmental and natural resources management in Malaysia is a complex medley of divided authority in some cases, overlapping responsibility in others, haphazard legislation in other and serious limitation in yet a few others. This situation is compounded by the number of federal agencies with responsibility for implementing one aspect or the other of environmental and natural resources policies, as the analysis in the next chapter will show.

CHAPTER SIX

Functions of Government Institutions with Responsibility for Environmental Matters

A. THE MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT

The objectives of the Ministry of Science, Technology and Environment are:

1. To carry out scientific and industrial research;
2. To establish standards for industrial products;
3. To supervise wildlife protection activities and
4. To coordinate nuclear energy research.

It is immediately obvious that the Ministry's mandate does not extend to environmental issues. There are historical reasons for this omission, as the DOE was originally attached to the then Ministry of Local Government and Environment. The DOE became part of the Ministry in March 1976, but because of this limited mandate remains a fairly autonomous branch.

The organizational chart of the Ministry is attached as Appendix I. The three major divisions of the Ministry which are of particular concern to us: (1) the National Environmental Quality Council, (2) the Division of Environment, and (3) the Department of Wildlife and National Parks.

1. The Environmental Quality Council

This Council, established under S4 of the EQA, advises the Minister on matters pertaining to the Act or on matters referred to it by the Minister. Membership includes the Minister; the Secretaries-General of the Ministries of Health, Trade, Labour and Manpower; a representative of the State Government of either Sabah or Sarawak; and representatives from the petroleum industry, the Federation of Malaysian Manufacturers and the academic staff of the universities or colleges in Malaysia. This representation probably reflects the narrow pollution focus of the EQA. The fact that none of the Peninsular State

authorities are represented on the Council also illustrates the remedial focus of the Act, because management is a matter for state control. However, even with regard to the matters within the EQA's responsibility, it is still arguable that the representation is too narrow because none of the individual polluting industries - rubber, palm oil - are directly represented on the Council. Although the DOE points out that the present representative from the Manufacturing Industries is also head of the Palm Oil Industries Association, it is clear that this representation is only coincidental.

2. The Division of Environment (DOE)

This Division, the principal arm of the federal government dealing with problems relating to environmental quality, is headed by the Director-General of Environmental Quality (D-G). Under S 3(1) of the EQA the Director-General (and consequently the DOE) is given the responsibility of discharging no less than 15 major functions, ranging from administration of the EQA, the conduct of investigations into the nature and causes of environmental problems, the promotion, encouragement and coordination of planning in environmental management, waste management and pollution control. The D-G is directly responsible to the Minister. The performance of the DOE to date illustrates the restrictive nature of the D-G's mandate. It is important to bear in mind that the DOE was created as an administrative response to a mounting environmental problem - pollution. The combined effect of this concern and the limitations imposed by the constitutional framework described above led the designers of the DOE to create a problem-solving institution (as opposed to a policy making and planning institution). Of course, a realistic account was taken of the professional characteristics (engineers, scientists etc.) of the then available manpower resources. Thus, while it may appear that the D-G has very broad wide-ranging powers,

these are restricted to pollution control, namely, licensing and monitoring of polluting industries and other activities.

The DOE now has a total staff of about 310 employees, of which approximately 20% are professionals. The staff is divided into the DOE's two main units: air quality control and water quality control units. In addition to headquarters staff the Unit has six regional officers. It realizes that the number of regional officers must increase but at this moment it is concentrating on entrenching the powers of the existing six.

a. Air Quality Control Unit

This unit has three main areas of responsibility:

- air quality
- noise pollution
- radiation

Not much work is being done in the radiation field because it is not yet a significant problem. Although noise pollution is becoming a major concern, the unit's staffing for noise pollution is rather weak due to the fact that no regulations exist. Consequently, the DOE has little justification for requesting additional personnel. Realizing that noise pollution is best controlled at the source, the unit has set up a National Committee on Noise Pollution, consisting of three working groups:

- Aviation Noise Working Group
- Motor Traffic Working Group
- Industries Working Group

These working groups are headed by industry representatives - the strategy being that these representatives will realize the importance of controlling pollution at source. Should this strategy fail, the unit will then consider control by planning, i.e. siting industries or other loud noise producing activities away from residential areas (land use planning and zoning) - a less effective method because the DOE's power to do this is unclear. This

alternative poses a more complex problem because it raises the important issue of jurisdiction. Hence, the only role which the Unit can play has to be of an advisory nature. The only working group which has completed its task is the Aviation Noise Working Group, which will soon be issuing guidelines on noise exposure levels to be used for planning purposes. With regard to the noise problem posed by the overflight of the Concorde in the Strait of Malacca, the federal government has allocated funds for the purchase of noise monitoring equipment.

The Motor Traffic Working Group has not been as successful. The main problem is that Malaysian regulation must keep abreast of an increasingly complex technology. A good example is car mufflers. If a sophisticated imported model needs repair, because of the high cost involved in importing a replacement, owners often resort to local adjustments who do not necessarily meet noise standards. The Standards and Industrial Research Institute of Malaysia (SIRIM), another branch of the Ministry, is now establishing noise standards for automobiles.

The situation is even more intractable with regard to noise from factories. The existing factories legislation are mainly concerned with occupational health and the tropical climate imposes constraints on planners. Therefore, short of regulating that all buildings should be air conditioned (to enable windows to be closed) the main solution will be to build buffers (trees, walls, etc.) between residential areas and industries. The Unit has no monitoring network of its own for noise.

The program for air quality is found in the Clean Air Regulations, 1978, which set emission standards to be achieved in three years. The Division decided to adopt emission standards (as opposed to ambient air quality standards) because it simply did not have the necessary data to establish ambient air

quality standards. The standards finally set were arrived at by studying practices in Singapore, Australia and the United Kingdom. Implementation of the Clean Air Regulations has on occasion encountered difficulties. One such difficulty relates to the siting of industries, e.g. the Batu Caves quarrying operations.

b. The Water Quality Control Unit

The Unit's responsibility extends to fresh water, as well as marine, pollution. It has three main sections - water quality monitoring, marine pollution monitoring and enforcement. The first two sections, like most of the others in the DOE, use the statutory and non-statutory approaches for implementation of the Act. The Unit has devoted considerable attention to controlling and monitoring the discharge of pollutants into rivers.

As regulations have been issued already, the bulk of the Unit's work involves inspection of palm oil and rubber processing plants and other factories, random checks, and the collection of effluent samples for testing. All analyses of samples collected are done by the Ministry's Chemical Department. In fact, if there is one appropriate phrase to characterize the Unit's work, it is division of responsibility. The Unit's work is limited to the activities described above, while SIRIM conducts all research on technology for industrial waste treatment, PORIM (Palm Oil Research Institute of Malaysia) and RRIM (Rubber Research Institute of Malaysia) are in charge of research on technology for waste treatment in the Palm Oil and Rubber Industries respectively. To this extent at least, the Division strives for optimal utilization of government agencies.

The Unit claims remarkable success in its programs - e.g. 24 of 42 polluted river basins which the DOE declared too polluted to sustain economic species have recovered to acceptable B.O.D. limits by March, 1981. Of course the Unit continues to encounter problems. One interesting and ironic situation is the control of government agencies engaged in pollution-generating industries. The Unit finds it comparatively easier to control private industries by the levying of fines, etc. (Even though it is fair to point out that pressure from these well established industries and complaints about the stringency of the regulations have forced the DOE to grant some concessions on the deadlines for meeting the effluent standards.) But with regard to government or quasi-governmental agencies, notably FELDA, the Unit has been less successful. This very unusual situation is in fact the reverse of the situation in many countries. For example, the DOE has had difficulty controlling pollution arising from FELDA's activities. And since FELDA produces 25% of Malaysia's palm oil, its potential for pollution is high. The DOE's opinion is that it has exhausted all possibilities and that the only available recourse involves resolution at the cabinet level.

The Marine Pollution Control section of the Unit monitors water quality. This monitoring program (baseline studies) started in 1977 with 194 stations in the Peninsula and 68 in East Malaysia. Now they have selected a few priority monitoring areas, 109 and 28 respectively, for special attention. All activities relating to the establishment of a contingency plan for the Strait of Malacca, the effects of oil exploration and exploitation in the South China Sea, the Law of the Sea Convention and the negotiations for UNEP's Action Plan for the East Asian Seas are conducted by this section. Some of these responsibilities are shared with the Department of Transportation (DOT) which administers the Merchant Shipping

Ordinance, the only piece of legislation on marine pollution.

The Unit's next major step will be a move into planning for water and marine resources.

c. The Wildlife and National Parks Department

This Department, headed by a Director-General, is an outgrowth of several laws and administrative arrangements. It became a branch of the Ministry in December, 1976, when the administrative restructuring which commenced after the passing of the 1972 Wildlife Act was completed. The Department is now divided into five major divisions:

1. Research and Management
2. National Parks, Wildlife and Sanctuaries
3. Law Enforcement
4. Administration, Development and Finance
5. Education and Training

Following reorganization, the Department faced a major staffing problem. Even now, with a total of 773 employees for Peninsular Malaysia, staffing is still bottom-heavy, with a large percentage of employees in the law enforcement division (mainly as forest rangers).

The Department's authority has now been shifted to management of wildlife, national parks and sanctuaries - an area covering about 5% of the total land area of the peninsula. The TMP proposal to establish 21 additional national parks posed a serious problem for the Department because, in the majority of cases, these proposed areas were places where land development and land conservation were in sharp conflict. A noteworthy example is the Endau-Rompin National Park, mentioned earlier. Besides, some of the areas mentioned in the TMP involve cultural and historic sites not within the Department's scope of authority. Therefore, the Department considers the list of proposed parks in the TMP a guideline only, and has established its own target to establish 10%

of the 21 parks.

The Department's other major programs involve working with FELDA to control damage being done by elephants on their oil palm plantations, and managing other endangered species in the peninsula, e.g. the remaining 30 Sumatran Rhino and 300 tigers.

B. THE NATIONAL LAND COUNCIL

This Council was established under Article 91 of the Constitution to formulate a "national policy for the promotion of and control of the utilization of land throughout the Federation for mining, agriculture, forestry or for any other purpose, and for the administration of any laws relating thereof." This policy is to be formulated in consultation with the federal and state governments as well as the National Finance Council. In addition to representatives from state governments, the ministries responsible for mining, agriculture and forestry are represented. The Ministry of Land and Regional Development is the Council's secretariat. All national policies for land use and management must have the seal of approval of this Council. As will be seen later, the Council, through one of its offshoots, the National Forestry Council, has issued a National Forestry Policy. A National Agriculture Policy has also been issued, while the fate of the National Mining Code has not been as fortunate.

C. THE MINISTRY OF LAND AND REGIONAL DEVELOPMENT

This Ministry coordinates all land development at federal and state levels, including major development schemes like FELDA, Federal Land Consolidation and Rehabilitation Authority (FELCRA), the Pahang, Johore and Trengganu Regional Development Authorities etc. These duties involve reviewing and evaluating land laws and policies; advising officers on land development; training; undertaking research; and generally helping the National Land Council in coordinating

and achieving uniform land administration. As land management is a matter for state control, considerable attention is focused on coordinating regional land development through the Regional Development Coordinating Committee.

The mandate described above is wide-ranging indeed. As is to be expected, the Ministry plays a coordinating role to the following departments and quasi-governmental organizations and corporations:

- the Department of Lands and Mines
- the Survey Department
- the Geological Survey of Malaysia
- FELDA
- FELCRA
- the Pahang Tenggara Development Project
- the Jengka Development Corporation

Due to the serious implications which FELDA's programs have on the environment and the number of times FELDA's operations at its oil palm mills have violated Palm Oil Regulations, that Authority will be described here.

FELDA

FELDA was created by the Land Development Ordinance (No. 20 of 1956) to open up land for development, targeted at between 70-100,000 acres a year under the TMP. FELDA opens up these lands for distribution to settlers who engage in palm oil, rubber, sugar cane, or cocoa farming under the guidance of FELDA agricultural officers. Palm oil and rubber account for over 70% of FELDA schemes, and the total number of settler families at the end of 1977 was over 46,000. Output from palm oil and rubber plantations is over 1.5m (ffb) fresh fruit bunches for palm oil and almost 62,000 metric tons for

rubber. These figures illustrate the potential for pollution which can occur. In fact, at one point, FELDA's palm oil mills had violated the Palm Oil Regulations to the extent that it incurred a M\$1.5m fine. FELDA's response to the Palm Oil Regulations has been to defer the installation of waste treatment plants because of the present unavailability of land: it has allocated all land around the mills to settlers and consequently cannot install the oxidation ponds which are so important for the palm oil effluent treatment process. Some opinions hold that FELDA finds it cheaper to incur fines which in many cases are not paid, than to lay out heavy expenditures to install pollution control equipment. Where fines are paid, the cost is passed on to the settler (there is no local "consumer" to bear the cost because all the palm oil produced is exported at fixed prices). This practice in effect negates the main objective of FELDA schemes. In fact, the DOE is frustrated in its attempts to regulate FELDA and ironically, is faced with a situation where it, as a federal regulatory agency, finds it considerably easier to control the private sector than to control another government agency. There are other problems associated with FELDA's method of land clearing - it rarely heeds technical advice to leave a vegetation cover along rivers to prevent soil erosion. To conclude, FELDA in its fast growth into a giant land developer has left a trail of environmental problems behind which threaten to undo the gains made by the land development process itself.

D. THE MINISTRY OF PRIMARY INDUSTRIES

The Ministry of Primary Industries is responsible for the effective development and marketing of Malaysia's primary products. The Ministry functions largely through statutory bodies and agencies. It also supervises

the Forestry Department, the Mines Department, and the Geological Survey Department. In addition, there are a number of research institutions under the aegis of the Ministry, such as: Malaysian Rubber Research Development Board (MRRBD), Rubber Research Institute of Malaysia (RRIM), the Rubber Exchange and Licensing Board (MRELB), the Rubber Industry Smallholders Development Authority (RISDA) the Malaysian Rubber Development Corporation (MARDEC), the Malaysian Timber Industry Board (MTIB), the National Tobacco Board (NTB), the Malaysian Pineapple Industry Board (MPIB), and the Palm Oil Research Institute (PORIM), etc. Thus, the Ministry, with some 100 employees, is primarily a policy-making body for all of the primary industries except for forestry, mining, and geological survey, where direct interventions take place.

a. Forestry Department

This Department is the federal coordinating agency for forestry practice in Malaysia. Its main duties include regulation and control of harvesting of forest resources, rehabilitation and reforestation of harvested forest areas, development of forest industries, conduct of forestry research, education and training and the coordination of national forest policy. As there is no private forestry in Malaysia, all forested areas are subject to the control of state governments. Therefore, the federal government's authority to discharge these functions arises from Article 94(1) of the Constitution, which sets out federal powers in respect of subjects under state control. With regard to forestry, the Article states that any professional advice emanating from the federal government shall be accepted by the state governments.

An examination of the functions of this Department shows that, with the exception of ownership, the line between federal responsibilities and state

responsibilities is very fine with regard to certain issues, and razor sharp in others. To start with, all professional foresters employed in the states are federally recruited, federally trained and report directly to the Federal Department. Even the non-professional staff (forest rangers, etc.) who are state employees are not eligible for employment in the service unless they have undergone training offered by the federal authorities. The federal government's unmatched manpower skills and dominant role in the technical field might give the erroneous impression of a considerable degree of federal influence over forestry activities. However, while the State Director of Forests, a federal official, gives advice on suitable areas and trees for logging, it is the state governments which have final say in the opening up of areas for felling and the granting and duration of timber licenses, etc. This is the one exception where the federal authorities' mandate and the state governments' ownership rights and administrative powers are clearly defined, and where, any attempt by the federal authorities to insist on their advice being followed would lead to open confrontation.

Consequently, despite the imperative terms in which the Department's rights are expressed, there have been instances of non-compliance, as is evident in the excessive logging and deforestation problems discussed in Chapter Two. In view of the economic impact of forestry, there are bound to be instances where technically sound forestry practices are sacrificed for revenue-generating considerations. Recent forestry practice in Malaysia is replete with such examples. The Department's strategy for dealing with some of these problems is embodied in the National Forestry Policy of April, 1978, which it is hoped will provide sufficient incentive not only for conservation measures but for restorative ones as well. With the exception of Jahore, all

the Peninsular States have adopted this policy. Sabah and Sarawak have their own policies which will have to be revised or rescinded in order to adopt the relevant parts of this national policy.

The policy's salient features call for the dedication of certain areas as Permanent Forest Estates. Within these estates there are to be three types of forests: (1) Protective forests -- those areas on slopes, hills, watershed areas which are necessary to be maintained in the forested state to ensure soil fertility, and, overall environmental quality; (2) Productive forests - those forests which will be used to meet the nation's demands for forest products on a sustainable yield basis; (3) Amenity forests for recreation, education and research purposes. The policy provides for the development of these resources in accordance with the principles of sound forest management, the pursuit of a sound program to achieve maximum productivity, proper coordinated planning among all land development agencies, etc.

The next important step in the implementation of this policy is the promulgation of relevant legislation. The existing forest legislation, enacted in the early 1930's, is not only archaic but when measured against the yardstick of environmental quality is completely obsolete. Therefore, the Department has prepared a Draft Forest Enactment to be presented for review to the next session of the National Forestry Council.

There are at least two other Federal government agencies whose programs encroach on forest areas - the Ministry of Agriculture and FELDA. FELDA's land clearing programs have presented the most problems for the Department, in spite of the fact that the Department has reviewed proposals for FELDA programs to ensure compliance with sound forestry practices. In view of the importance of land development in the NEP, it is easy to envisage instances where the Department's objections to FELDA's proposals will be overridden by practical

or political considerations. This problem brings us back to the ubiquitous issue of competing demands on the nation's resources. With regard to practices which are detrimental to the development of sound forestry practice, tradeoffs will be balanced within an acceptable level only if, as the policy calls for, Government agencies cooperate with each other in policy implementation. As it takes between 35-70 years for Malaysian hardwoods to regenerate, the challenge facing both the Department and the government in achieving the goals of sustainable development in the forestry sector is a tough one indeed.

b. The Department of Mines

The Department of Mines is responsible for mining research activities as well as enforcement of the laws pertaining to the mining code. The Department is composed of the Mines Research Institute, a Minerals Economics Division, and five sections, each responsible for the inspection of mining activities in different zones of the country. Of the 800 mines in the country, approximately 500 are located in the north zone, or the states of Penang, Kedah, Perlis, and Perak. Existing regulations call for all mines to be inspected once a week, but in practice only the large mines are inspected this often. The Department of Mines recently took the initiative to consolidate and update all existing laws pertaining to the mining industry, but constitutional problems have precluded enactment of this new national mining code.

E. THE MINISTRY OF AGRICULTURE

The policy of the Ministry of Agriculture (MOA) is to: (a) improve the economic status and social conditions of primary producers and create a progressive rural society; (b) produce sufficient food for the nation and for export; and, (c) promote the development of agro-based industries so as to

increase employment opportunities in rural areas.

The following technical divisions carry out the MOA's policy.

- (a) Department of Agriculture, which takes care of extension services at the state and local levels, technical services such as crop protection, soil conservation, subsidies, regulations and FELDA's fertilizer program.
- (b) Drainage and Irrigation Department - takes care of pre-feasibility studies for irrigation projects. Actual implementation of irrigation works is done by the states.
- (c) Fisheries Department - is involved in fisheries planning, development conservation and management, research and extension and training. With the adoption of a 200 mile exclusive economic zone, this Department's resources will have to be stretched even further.
- (d) The Primary Services Department
- (e) Department of Community Development
- (f) Cooperatives Department

In addition, the MOA supervises the following six statutory bodies:

- (a) The Farmer's Organization Authority;
- (b) The National Livestock Development Authority;
- (c) The Fisheries Development Authority;
- (d) The Agricultural Bank of Malaysia;
- (e) The Malaysian Agricultural Research and Development Institute; and
- (f) The Federal Agricultural Marketing Authority.

This Ministry, perhaps more than any other Ministry, has the most complex task of weaving its way through the maze of constitutional division of responsibilities: - Marine fisheries is on the Federal List, while riverine fisheries,

soil conservation and agriculture are on the State List, and drainage and irrigation and animal husbandry are on the Concurrent List. Nevertheless, the Ministry has managed to establish and maintain a good working relationship with the state government.

F. MINISTRY OF HEALTH

Public Health Engineering Unit This Unit is responsible for executing national rural water supply programs, rural sanitation and the provision of technical services to the local authorities.

G. MINISTRY OF WORKS AND HOUSING

Public Works Department A federal government agency which deals with planning and implementation of national drinking water supply. It is also in charge of implementing water supply projects for land development schemes.

H. MINISTRY OF LABOUR AND MANPOWER

Factories and Machinery Department The main function of this Department is the maintenance of occupational health and safety, but since 1977, the Department has been engaged in the installation of pollution control equipment. It has been investigating complaints on industrial pollution - noise, toxic gases, sulphur dioxide, etc., around Kuala Lumpur and at one point was involved in monitoring dust levels around the Batu Caves area. It is not clear how these responsibilities and duties are divided between the Department and the DOE, nor indeed on how these two Departments coordinate their activities.

I. PRIME MINISTER'S DEPARTMENT

(a) The Economic Planning Unit (EPU)

The EPU, within the Prime Minister's Department, is responsible for planning national development. In addition, the EPU serves as the Secretariat to the National Economic Council (NEC); the National Development Planning Committee (NDPC) and the Foreign Investment Committee (FIC); and provides advice to the National Action Committee (NAC).

In national development planning, the EPU, in addition to other activities, formulates objectives in development planning; prepares the annual budget; coordinates the execution of various development projects; monitors and evaluates the progress and results of each development plan and, where necessary, recommends change; advises the government on overall economic problems and plans and coordinates foreign development assistance for the implementation of the Plan.

The EPU is divided into four main divisions: the National Planning Division (NPD), the Operations Division, the Foreign Investment Committee, and the Regional Development Division. The NPD is concerned with macroeconomics, distribution of wealth; population and manpower; and external assistance and econometric service. The Operations Division is responsible for the implementation of the Plan, particularly agriculture/industrial development; budgeting and social services; and for infrastructure, utilities and technical services. The Foreign Investment Committee processes applications from the private sector and from foreign investors who wish to invest in the country. Finally, the Regional Development Division concerns itself with regional and urban planning studies.

(b) The Implementation and Coordination Unit (ICU)

This unit supervises the implementation of development plans. Its

responsibilities include: monitoring all economic and social programs to achieve the objective of the NEP; coordinating policies of all government departments to facilitate implementation of the NEP; developing a dynamic system of administration; improving overall administration in the system. The ICU acts as the secretariat to the National Action Council.

J. RESEARCH INSTITUTIONS

Finally, there are some research institutions whose areas of responsibility extend to agricultural and soil research and, in very few cases, research on the techno-economic feasibility of appropriate antipollution control technology.

These institutions are:

- (MARDI) Malaysian Agricultural Research and Development Institute
- Standards and Industrial Research Institute of Malaysia (SIRIM)
- PORIM
- RRIM

CHAPTER SEVEN

Basic Environmental and Natural Resources Laws and Sectoral Regulation

A. Environmental Quality

I. Malaysia's legislative policy for overall environmental quality is set out in the Environmental Quality Act, 1974, (Act, 127). This is an enabling Act, empowering the Minister (of Science, Technology and Environment) to issue regulations. The focus of the Act is the prevention, abatement and control of pollution and the enhancement of the environment. The reasons for this slant towards remedial, rather than preventative or planning measures (division of powers between State and Federal authorities) have been discussed earlier, as have the powers and duties of the post of D-G of Environmental Quality. Under S10, the D-G is declared to be the licensing authority for the issuance, renewal or transfer of licenses for prescribed premises (premises in respect of which pollution control licenses are required). Among the conditions which may attach to licenses under S12 are the installation and operation of pollution control equipment and the establishment of monitoring programs etc.

S20 specifies the necessary information to be contained in license applications -- these include specific plans for the premises, details of the undertaking and a description of wastes to be discharged. S20(2) goes on to state that the D-G may not grant an application unless the applicant has obtained planning approval of the competent authorities. This provision in effect grants the D-G de facto regulatory control over the creation of new industries with the potential for environmental pollution.

The core section of the Act - Part IV, entitled "prohibition and control of pollution" S21 -- provides that, after consultations with the EQC the Minister may specify acceptable conditions for the "emission, discharge or deposit of wastes or the emission of noise into any area, segment or element of the environment" and in addition, may set aside any portion of the environment within

which the emission, discharge or deposit is prohibited or restricted. The ensuing four sections list restrictions on air pollution (S22), noise pollution (S 23) pollution of the soil (S 24) and pollution of inland waters (S 25), while SS 26 and 27 prohibit the discharge of oil into the sea and Malaysian waters, and S 29 prohibits the discharge of wastes into Malaysian waters. Each of these provisions impose a fine, ranging from as low as M\$5,000 or one year imprisonment, or both for noise pollution to M\$10,000 or/and two years imprisonment for soil and inland waters' pollution. Fines for oil pollution under SS 26 and 27 range from M\$1,000 to a maximum of M\$25,000. Also, the Act makes a long list of regulations which the Minister may issue (19 altogether). This Act came into force on 14th March, 1974.

A detailed scrutiny of the core provisions, especially SS 20-25 raises some serious questions if a strict interpretation of the Act is adopted. For example, is the Act intended to apply to unlicensed activities? i.e. can the D-G exercise his powers under S 21 to regulate industries which have not been licensed? This, and other uncertainties point to the high level of generality of the provisions and the need for regulations to implement the Act. The DOE held consultations with interested or affected institutions to enable it to formulate the necessary regulations and to clarify some of the anomalies in the enabling Act. To date, five sets of regulations have been issued under the Act. These are:

1. The Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations 1977

The Regulations establish a four-generation list of effluent standards to be met by the palm oil mills. Under the regulations, the operative date is 1st July, 1979 when the mandatory minimum limit of a BOD limit of 2000 mg/l came into effect. During the first year of operation, 1st July 1978 -

30th June, 1979, the 5000 mg/l BOD limit was not mandatory mainly because of technological limitations. Mills which discharged effluent over and above this limit were charged pollution fees (or effluent related license fee of M\$100 per metric ton of BOD load). Thus, a total of M\$35m was collected in that first year of operation. Consequently, however, the ambitious objective of a 75% reduction of the BOD levels was replaced by (an actual) 22% reduction.

The Regulations also make provision for the waiver of pollution fees for research on effluent treatment technology (Regulation 17). The third set of standards came into effect on 1 July, 1980, and require the Palm Oil Mills to attain a BOD load limit of 1000 mg/l. Enforcement takes the form of random checks by the DOE to monitor operations and to take effluent samples for testing.

There are some small-to medium-sized mills which have not only met but have exceeded the current minimum standards. Thus, the incentives provided seem to have worked in certain cases, and a technology has been developed which is far advanced of the technology in other palm-oil producing countries. Some mills have taken advantage of these incentives to conduct research on the possibility of recycling POME for use as fertilizer or animal feed. In other instances the regulations have not had their desired effects and, as was seen earlier, there are persistent violations in certain areas. This is especially true with regard to large-scale mills where the complex technology is not only costly, but land is not easily available to enable the construction of an adequate number of ponding areas.

2. Environmental Quality (Prescribed Premises) (Raw Natural Rubber) Regulations, 1978.

These Regulations are, with minor exceptions, very similar to the Palm

Oil Regulations. One of the most important differences is that a three-generation set of standards is imposed, the deadline being April 1, 1981. The second difference is that only a licence fee is charged for disposal of effluents which do not meet the standards, because, unlike the Palm Oil industry, the technology in the rubber industry is much more advanced and the standards are mandatory. As a result, enforcement of these regulations has not encountered as many problems as enforcement of the Palm Oil Regulations.

3. Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979.

These regulations came into effect on 1st January, 1979 for existing industries, and 1st January 1981 for new industries. Once again, the policy of gradual implementation of laws is adopted and an effluent-related fee is imposed for the discharge of untreated or inadequately treated sewage. These Regulations are more complex because of the different types of pollutants dealt with. Hence, license fees vary, depending not only on the pollutant involved (toxic chemicals, sewage, inflammable solvents, etc.) but also on the location of the discharge - inland waters within catchment areas, other inland waters, land, etc. In the Second Schedule, the standards methods of effluent analysis are declared to be the standards set by the American Public Health Association, or the Department of Environment of the United Kingdom.

4. Environmental Quality (Clean Air Regulations) 1978

These regulations came into effect on 1st October, 1978, and apply to all industrial facilities, fuel burning equipment, chimneys or any other facilities that discharge or are capable of discharging "impurities" into

open air. The combined effect of Part II and the First Schedule of the Regulations is to prohibit, in the absence of prior approval, the location of industries, equipment or facilities that are likely to cause air pollution within the vicinity of residential areas. Part III regulates the burning of wastes by restricting such burning to incinerators of such types and designs as are approved by the D-G. Open burning is to be allowed only in cases where it is the only economically practicable method and is not likely to cause pollution. Open burning is permitted in such categories of cases as pest control, research and burning up yard trimmings, etc. Part IV regulates emission of dark smoke, while Part V regulates all impurities such as smoke, dust, ash, solid particles, odours, gaseous and radioactive substances etc., by setting specific emission standards. For specific areas, eg the Batu Caves area, three sets of emission standards are set, ranging from the least stringent Standard A (to be complied with by all existing industries) to Standard C, the most stringent (to be complied with by all new installations).

These regulations are not as comprehensive as they sound however, because they do not cover one of the major (and rapidly worsening) sources of pollution in Malaysia - motor vehicle emissions. Here again, as will be seen later, the responsibility is divided between the DOE and the Ministry of Transportation. And, of course, even with regard to these Regulations, the Batu Caves contretemps is an illustration of the limitations imposed on the enforceability of regulations at the state level.

5. Environmental Quality (Licensing) Regulations, 1977

These regulations specify the types of activities for which licenses are required and provide a sample set of standard application forms for licenses, specifying the types of information to be presented to the D-G.

II. With the possible exception of the Raw Natural Rubber Regulations, a fair conclusion is that these Regulations, in particular the Palm Oil Regulations, tend to be lenient. The DOE seems to be preoccupied with striking a balance between practical and technological feasibility of the pollution control measures and the need to prevent or avoid environmental hazards. While this is a laudable objective its actual implementation appears to be heavily weighted in favour

of the industries. The DOE is particularly keen on giving industries time to develop pollution control technology and claims that there are enough incentives (waivers) and deterrents (fines) to create a climate which will encourage the development of appropriate technology and treatment processes. In fact, there are impressive examples in the palm oil industry which support this claim but these are isolated examples that bear no relationship to the stringency of the Regulations. In the oil palm industry, for example, there is no guidance for mill owners which provide information on the kinds of treatment processes that will meet the DOE's standards. The DOE has refused to publish evaluations of any particular technology or waste treatment processes on the grounds that it does not have such a responsibility nor can it be seen to be patronizing one single method. This is a particularly inadequate state of affairs, especially with regard to new mills which may have very little guidance and may end up selecting a merely mediocre treatment process which barely meets the requirements, thereby passing over better technology. The DOE insists that the agency responsible for providing mills with such information is PORIM. But an examination of PORIM's mandate shows no such powers, its responsibilities being focused on agricultural research. Besides, PORIM is too young an institute (2 years old, compared with DOE's six years) to have acquired the necessary expertise. Whereas an examination of the D-G's mandate and the EQA in its entirety will show that the D-G has rights to issue standards - it is unlikely that an action of the D-G issuing a list of accepted technology and pollution control devices will be struck down as unauthorized. There is little evidence of the DOE encouraging treatment processes which involve waste recycling.

The DOE's method for enforcement of these regulations has taken the form

of air and water monitoring activities, physical and chemical analyses of air and water monitoring activities, physical and chemical analyses of air and water and the investigation of complaints from the public. All of these involve taking action after-the-fact.

B. Sectoral Regulation

As most of the natural resources sectors (land use, water, forests, mining) are under state jurisdiction, one finds that there are a variety of legislation relating to these topics and which continue to remain in force. Some of them are complementary to the Environmental Quality Regulations, some are in direct conflict while others pose potential conflicts of jurisdiction. Most of these laws were passed prior to independence and although they have benefited from regular amendments the standards they set are usually outdated. All of them designate the relevant federal, state or local government authority with responsibility for enforcement. Most of the resource management laws were passed as a measure to promote uniformity -- the intention being that all the state governments will adopt these laws (enactments) and incorporate them into their body of laws. This has been achieved to a large extent, but there are still many of these laws which have not been adopted by all states.

1. Water Pollution

The earliest water legislation which remains on the Statute Books is the 1970 Revision of the 1920 Water Enactment F.M.S. (Cap. 146) as amended in 1970.

This law, inter alia, prohibits the discharge of:

- (1) any poisonous or noxious matter that will render the river harmful to public health or pose a threat to fauna and flora, or to other beneficial uses of the river;
- (2) any matter the temperature and chemical or biological content of which

poses a public health threat;

- (3) any matter which renders treatment of the water difficult; and
- (4) oil into streams, rivers or watercourses. It also prohibits the disruption of any river so as to interfere with the flow of water.

Other water-related legislation include: the Mining Enactment F.M.S. Cap 147, which not only controls the use of water for mining purposes but regulates the disposal of earth, sludge, dirt, tailings or other refuse from any river into a water course; Part VIII of the Local Government Act, 1976, (Act 171) which regulates pollution of streams, public drains or watercourses by prohibiting, under penalty of a fine, the deposit of filth into such bodies of water; the Street, Drainage and Building Act, 1974, which prohibits the discharge of trade effluent into any watercourse (including drains or sewers) or the sea without prior written permission from the state or local authorities. The Drainage Works Ordinance, 1954, merely prohibits interference with drainage works as well as the unauthorized construction of canals, watercourses, drains. Although the main objective of the Fisheries Act, 1963 is to protect fish in marine and estuarine waters, it incorporates provisions for the control of discharges of harmful liquid or solid substances into water. Penalties for infringement of each of these laws are different.

There are some other laws which indirectly regulate water pollution by regulating health: e.g., the Malaria Eradication Act, 1971 (Act 52). Further, all the Acts which are geared toward land use and resource conservation affect the country's water supply (and sometimes even water quality). Because these effects are minimal those laws will not be described here, nevertheless, it is important to bear this in mind when discussing the land use and forestry laws.

2. Land Use

The National Land Code (Act 56 of 1965) was passed to deal specifically with this subject. Under the code, land is divided into three major categories: (1) agriculture, (2) buildings and (3) industry. Responsibility for dealing with these three categories is set out in the Act. Policy and legislation for the individual land use sectors are in the process of being formulated. In addition, there is the Town and Country Planning Act 1976 (Act 172) which controls proper planning for local authority areas. Under the Act, State Planning Committees are to be set up to advise states on land use matters such as the conservation, development and use of state land. The Streets, Drainage and Buildings Act mentioned above contains some land use provisions. Finally, land use planning and zoning provisions are incorporated in the Town Boards Enactment (F.M.S. Cap 137), Municipal Ordinance and the City of Kuala Lumpur (Planning) Act.

3. Soil Conservation

The major legislation here is the Land Conservation Act No. 3 of 1960 which has been adopted by all the Peninsular States. Its main objectives are the conservation of land (landscape, hill-lands etc.) and the protection of soil from erosion. Hence, clearing of hill-land, cutting, interfering with, or destruction of, vegetation is prohibited unless prior permission has been obtained from the local authorities. Also, the state authorities are authorized to designate certain land for soil conservation purposes and to issue appropriate regulatory controls.

4. Forestry

The basic law is the Forests Enactment, 1937 (F.M.S. Cap. 153) as amended. The problems of deforestation described in the earlier chapters, and those faced by the Forestry Department in discharging its responsibility is an indication of the adequacy of these laws. It is expected that the adoption of the National

Forestry policy will prompt the formulation and adoption of an up-to-date Forestry Code or Forest Conservation Law which takes present day forestry problems into account.

5. Mining

Some of the regulations in the Mining Enactment 1927 (F.M.S Laws Cap 147) have been referred to earlier. In addition to the relevant sections which deal with the discharge of pollutants from mines, there is S110 which gives wide powers of inspection and control to the Senior Inspector of Mines as well as S130 which gives powers to the State authorities to issue rules. One such rule issued to implement S74 of the Act is Rule 13, which sets the prescribed amount of solid matter in effluent water at 800 grammes per gallon - a standard which is about five times lower than the standards currently set by the DOE under the Sewage and Industrial Effluent Regulations. The most recent attempt at revising this mining law - the proposal for a National Mining Code which would have updated the law - failed. Consequently, the Mines Department has decided to adopt a policy of gradual revision of the Enactment by raising the standards for effluent discharges in stages so that it eventually reaches the same level as the DOE's regulations.

6. Fisheries

In addition to the Fisheries Act, 1963 there are two other Acts which contain provisions on fisheries conservation. The first is the Petroleum Mining Act, 1966 Act 95, S14 of which provides that a licensee of a petroleum mining lease shall not carry out the authorized operations in such a way as to interfere unjustifiably with fishing or the conservation of the living resources of the sea. The second is the Continental Shelf Act 1966,

Act 83 which authorizes regulations to prescribe measures to be taken in certain marine zones for the protection of the living resources of the sea.

7. Wildlife and Protected Areas

The Protection of Wildlife Act, 1972 (Act 76) is a consolidated legislation on wildlife protection in Peninsular Malaysia. The Act provides lists of protected animals, birds and insects and empowers the (now) Director-General of the Wildlife and National Parks Department to issue licenses and permits for wildlife-related activities such as hunting, carrying on of trade as a taxidermist etc. Part IV of the Act makes provision for State authorities to establish wildlife and reserve sanctuaries, while the National Parks Act, 1980, Act 226, makes the same provision for the establishment of National Parks. The major difference between the two types of protected areas under these two Acts is that under the latter Act, the State Authorities have powers to permit certain types of occupation of land within a National Park. There are very few exceptions to the rule in the Wildlife Protection Act which prohibits the occupation of land within an area designated as a wildlife reserve or sanctuary. Also, the 1980 Act creates a National Parks Advisory Council to advise the Minister on matters relating to the conservation, utilization, care, control and management of a National Park.

8. Other Regulations

The Motor Vehicle (Control of Smoke and Gas Emission) Rules 1977, made under the Road Traffic Ordinance, 1958 are enforced jointly by the Ministry of Transport and the DOE. Although the objective of the Factories and Machineries Act 1967 is occupational health and safety of factory workers, it includes provisions which regulate the emission or discharge of any substance, (liquid or gaseous, solid wastes, noise) or radiation, etc., which are likely to be injurious

to human health or the environment. The importation, manufacture, and licensing for the control of use of pesticides is regulated by the Pesticides Act 1974 (Act 149). Also, it contains provisions on the control of pesticides residue in food. This Act establishes a Pesticide Board which consists of the Directors of the relevant government Departments including Health Services, Forestry, Agriculture and the Chemistry Department. This representation has been criticized as too narrow and critics, (mainly the non-governmental organizations) have been pressing for the inclusion of ordinary citizens and environmental representatives (both government and non-governmental) on the Board. The effective date for implementation of the Act was April 1, 1981.

While this list of laws may appear too long it is worth pointing out that it is by no means comprehensive. This selective, descriptive list is provided in order to highlight the duplication, overlap and inconsistencies which have occurred as a result of the division of responsibilities between the various arms of both the federal and the state governments and to stress the need for a consolidation of these laws.

CHAPTER EIGHT

Other Methods of Implementing Environmental Policy - Environmental Planning and Environmental Impact Assessment

Although the laws described in the preceding Chapter are not exhaustive, one major conclusion that can be drawn is that the legal approach to environmental management in Malaysia is characterised by remedial measures. However, it is recognised that in order to attain the objective of balancing development with preservation of environmental quality, the strategy for implementing environmental quality should contain a second component - preventive measures which integrate environmental planning within the development process. There are few who would disagree with the argument that environmental planning is necessary to ensure that development gains are not negated by adverse effects on the environment. Yet, the practical application of these strategies in Malaysia becomes a very knotty problem because overall development policy in the TMP has been paramount. Development must proceed at a desirable pace and environmental considerations must not act as a rein on this process. The pertinent question then becomes: What are the practical means for striking a workable balance between these two potentially conflicting objectives? The Malaysian authorities have considered the adoption of two complementary methods for dealing with these problems - environmental planning and environmental impact assessment.

Environmental Planning

This procedure involves land use planning and zoning, environmental surveys, and the establishment of environmental quality standards. In the

ideal situation, these procedures could be smoothly integrated into development activities in a non-adversarial manner. However, two major handicaps exist in Malaysia.

The division of responsibility between federal and state authorities, especially with regard to the issues of land, (State) land use planning and zoning (State and Concurrent) and surveys (Federal), is often unclear. However, this problem has not proved to be so intractable as to prevent the development of projects. The Land Capability Classification Program which commenced in 1961 has resulted in complete land classification surveys for almost all states. The DOE has initiated environmental quality surveys (air and water) in parts of Peninsular Malaysia. With regard to land use planning and zoning, guidelines have been prepared by the DOE to aid states in the siting of industries. Also, in the emerging regulations under the EQA one sees the beginnings of the establishment of environmental quality standards which will be greatly strengthened if the earlier legislation (like the Mining and Waters Enactments) are updated.

The second major handicap is the shortage of trained environmental experts to execute these programs. Some attempts are being made to alleviate this problem. For example, the Department of Environmental Studies (Faculty of Science) at the University Pertanian (the Agricultural University), graduates about 70 environmental scientists a year. These graduates have professional training in environmental planning, management, and control and are a vital resource to federal and state agencies. Currently there is a proposal to establish a program on environmental engineering at the Faculty of Engineering and to upgrade these environmental training institutions into a National Centre for Environmental Studies. Thus, with proper planning and adequate financial support the staffing demands of the environment-related institutions will gradually begin to be satisfied.

Environmental Impact Assessment

It will be recalled that the TMP included a policy statement on the establishment of environmental impact assessment (EIA) in planning for development, "but bearing in mind that the adoption of environmental protection measures will need always to be in balance with development costs". This caveat reflects the concern described earlier in this chapter - the avoidance of a situation where environmental considerations act as a brake on the drive to reach development goals. To attain these objectives, an Ad Hoc Panel on EIA was established in March 1977 to advise on methods for the implementation of the EIA proposal. The Panel included representatives from the DOE, EPU, ICU, Town and Country Planning Department, Ministry of Health, Drainage and Irrigation Department (DID), Fisheries Department, DOA, National Housing Department, Forestry Department, National Parks and Wildlife Department, Geological Survey, Universiti Pertanian, University of Malaya, FIDA (Federal Industrial Development Authority) and PETRONAS.

In discharging its responsibility this panel had to confront such major issues as: the types of projects which would require an EIA, the appropriate format and procedure for the preparation and presentation of the report, the types of agencies and bodies which should participate in the process, etc. At the end of its deliberations, the panel adopted a proposal entitled "Guidelines and Procedure for Environmental Impact Assessment" which was to be issued by the DOE. This proposal has been presented to the Cabinet and is awaiting approval.

The salient features of the proposal are: the incorporation of the EIA procedure into the prefeasibility and feasibility study phase of project planning in order to avoid delays, the creation of an independent body (a Review Panel) to scrutinise EIA reports and the establishment of three levels of assessment to ensure that simple straightforward projects are not bogged down by complex EIA procedures.

Briefly put, the procedure will entail the following. First, an initial screening (IS) will be done on all projects (by the project initiator) to determine potential environmental effects. If these effects are not fully known, the procedure will move on to an Initial Environmental Evaluation (IEE) Phase. If this evaluation determines that the environmental effects will be significant, the next step will be initiated - EIA proper. The first two reports will go to the Review panel, consisting of a chairman appointed by the Ministry of Science, Technology and Environment, specialists in ecology, environmental health, cultural and social environment, natural resources management, representatives from the EPU, Ministry of Trade and the public. After their review, the report and recommendations go to the Approving Committee (either the State Planning and Development Committee, for State projects or the Estimates Sub-Committee of the National Departments, eg Mines, etc.). The recommendations which go to these Approving Committees should be one of the following:

- (1) EIA to be prepared
- (2) Project to be approved as planned
- (3) Project to be approved with certain conditions
- (4) Project to be rejected

The DOE's time frame for this proposal calls for partial implementation during the Fourth Malaysia Plan (1981-1985) and total implementation by the end of the Fifth Malaysia Plan, 1990. The Department's original target for partial implementation was July 1979, when it was expected the the IS procedures would be in effect but the delay over the approval of the entire EIA proposal has prevented this from materialising.

At this point, a brief description of the procedure for overall development decision making with the Government structure ought to be given in order to be able to evaluate the smoothness with which this proposal can be incorporated into the system.

Generally speaking, specific proposals for projects originate from the states or federal agencies. These proposals are presented to the EPU, which screens them for overall economic development potential before submitting them to the Estimates Sub-Committee. After another review by the National Development Planning Council the proposal goes to the National Economic Council for review on compliance with political objectives. From here, the proposal (whether modified or not) is examined by the Cabinet, the National Action Council and Parliament. After this final stage of review for overall compliance with national policy the proposal is presented to the Implementation and Coordinating Unit (ICU) which is responsible for monitoring decisions and ensuring that agencies expedite the implementation of decisions or project proposals. A simplified version of the decision making structure is attached as Appendix II.

It can be seen from this summary that the EIA proposal described above is designed to take place before a project proposal is submitted

to the EPU. It is difficult to give a fair evaluation of this EIA procedure as it has not even been tested on any development project in Malaysia. Comments as to its practicability will merely be made. The proposed procedure reflects the concerns discussed earlier in that it attempts to incorporate the EIA procedure at the planning level. However, this may be an easier objective to stipulate than to implement. For example, with the possible exception of the representation of the EPU and the ICU on the Review Panel, the interaction between the impact assessment procedure and the national decision making procedure is unclear. Presumably, the two procedures are supposed to take place simultaneously to avoid wasting time but even then, it is unclear what impact one procedure has on the other. It is clear from the description of the decision-making structure that after the prefeasibility stage a project proposal goes through a whole series of reviews, which may end up altering the nature and content of the project. If, for example, after the prefeasibility stage and after review by the National Economic Council a fundamental change (with potential alterations to the environmental consequences) is recommended, what mechanism is incorporated into the EIA procedure to take account of this? In fact the proposed procedure may end up negating the entire objective because as it stands now it is a process which is external to the decision-making process involving the NDPC et al. Not having full details of the deliberations which led to the adoption of this proposal, it is difficult to pass judgment. Nevertheless a few questions can be raised. For example, why did the proposal not call for the establishment of (maybe an Environmental Sub-Committee) within the EPU? Why was there no requirement to submit proposals to the DOE for environmental review at the same time that the

proposal goes to the NPDC? Or why was a proposal not made for the DOE to become a member of the NPDC? And perhaps most important of all, because environmental management is one of the important development issues, according to the TMP, why was the EIA proposal not presented as a part of the ICU's review processes? All these questions are posed as alternatives which, in our opinion, may contribute to the smooth but effective integration of EIA into the project development and implementation structure. As it stands now, the proposal is a highly structured, formalised process, most of which is to be completed at the prefeasibility stage, and at a time when the project has not gone through the normal government review processes. The main criticism against this procedure is that it has not been integrated into the system.

The fact that the EIA proposal has not been adopted does not imply that no EIA's are conducted on projects. Examples were given of EIA's prepared by the Drainage and Irrigation Department on irrigation projects and by the National Electricity Board on a hydro-electric project. Perhaps the fact that these two agencies deal with water resources projects - subjects with unquestioned environmental impacts - may be relevant. Nevertheless, these two examples are an indication of the need for EIA's, their feasibility and the need for urgent adoption of a national procedure to ensure uniformity.

CHAPTER NINE

The Strait of Malacca

Background

Of special concern to Indonesia, Peninsular Malaysia and Singapore is the environmentally fragile Strait of Malacca. The Strait, one of the world's principal waterways, teems with maritime traffic of all kinds (on a normal day there are over thirty instances when large ships meet and pass each other), but of most importance are the ten to twenty supertankers per day which lumber through the Strait in very confined safety lanes.

These supertankers, each drawing some seventy feet of draft, require several nautical miles to come to a stop and are virtually unmanageable with their engines reversed. And because of a phenomenon called "squat", the bottoms of these vessels come very close to the natural sea bed depth of seventy-six feet. Any grounding which would tear open the skin of the vessel, or any major collision between one of these behemoths and the four hundred other vessels which use the Strait per week, would bring about a catastrophe of hitherto unknown proportions. And that such a calamity could occur is too easily borne out by the record. From 1971 to 1975, there were fifteen separate accidents involving supertankers. From 1975 to 1979, four incidents took place. Even as recent as March, 1981 a further accident took place which, fortunately, did not result in an oil spill.

Environmental Implications

The roughly triangular shape of the Malacca Strait and a westerly wind would ensure that heavy oil sludge would ooze onto the coastlines of all three countries (Malaysia, Indonesia, and Singapore). A recent UN Study postulates that the three countries would have but eight hours to respond before more than one hundred tons of oil per hour began to wash ashore. Detergent used to sink this sludge would destroy the source of livelihood for 60,000 fishermen and their half million dependents in Malaysia alone. This one calamitous event would in several days remove a large percentage of Malaysia's protein supply. And while data on the Strait's fishery are incomplete, it would not be unreasonable to suggest that the fishing industry in the Strait amounts to something in the order of one billion dollars per year. What a major oil spill would do to the seaside resorts which pocket the area and which attract sun seekers from all over the world is incalculable. However, economics aside, it has been estimated that it would take more than twenty-five years for the ecological cycle to resume again after a major oil spill.

But even should such a calamitous event not occur, the Strait of Malacca is in trouble enough. Over the past decade there has been a steadily rising amount of pollution taking place in these once sparkling waters. The routine pumping out of bunker oil and slops by vessels using the Strait, the discharge of municipal sewage and industrial wastes, the rivers laden with palm oil effluent that flow into the Strait, etc., all threaten to turn this vital area into a stinking cesspool.

Recent Events

Several years ago, the three littoral states faced up to the grave danger inherent in a major marine disaster and worked together to solve their common problem. Assisted by the Inter-Governmental Maritime Consultative Organization (IMCO) and working through the Southeast Treaty Organization (SEATO), the three states evolved a traffic separation scheme which came into effect on May 1, 1981. Although this plan will be of great assistance, it should be noted that it will not guarantee safety in the Strait of Malacca and the adjoining Strait of Singapore. Any coastal freighter, improperly navigated, could collide with a supertanker even though the latter is in the proper channel. All it would take would be the breaking of the supertanker's skin, the release of crude oil to the atmosphere, and a spark. The resulting inferno would release vast amounts of oil which would ruin these environmentally fragile waters for the next several decades. What seems to be needed is an effective, three-country plan to mitigate the effects of such a disaster, but that unhappily does not exist at the present time.

Working under ASEAN, the three countries have produce an agreement in principal to cooperate in the event of a disaster. In addition, each country has produced its own action plan. However, these fall short of the mark insofar as coordinated action is concerned and are limited to the states' own territorial interests. What appears to be needed now is a legal agreement which pledges resources and a detailed tripartite action plan such as has already been prepared under UNEP. In addition, each country will have to provide in actuality, the resources which it

now provides on paper only. Further, the communications linkages with Sumatra will in all probability have to be strengthened. If all of these activities are carried out, and if rehearsals, or drills are regularly performed, one could then say that the developed and the developing worlds had successfully cooperated on a major environmental problem.

CHAPTER TEN

NGO Involvement in Environmental Matters

The visibility of Malaysian environmental NGOs and the fervour with which they handle local issues have resulted in outside observers fascination with these organisations. At the outset it is important to point out that their activities have very little to do with citizens' participation, as is generally understood in the United States for example. In fact, one bone of contention between these NGOs and the government is that in none of the relevant legislation is the private individual afforded a right to participate in any of the decision-making processes relating to environmental questions. Neither have their rights to do so been upheld in any court of law. Hence, their modus operandi and roles are different from the Sierra Clubs of the world. Two major organisations of interest here are: the Environmental Protection Society of Malaysia (EPSM) and the Consumers Association of Penang (CAP) (their environmental branch, Sahaba Alam Malaysia - Friends of the Earth).

The Environmental Protection Association of Malaysia (EPSM)

The Society was established in January 1975 as a response to the government proposal to promulgate the Environmental Quality Act. Its membership, although very small (95 members in March 1981) is a broad spectrum of Malaysians from all walks of life with a common concern for enhancement of environmental quality. It is mainly because of the vitality of its leadership that this small society has had an impact which is far in excess of its actual size.

The Society's main activities include publicising environmental problems through press statements (over 70 such statements covering a wide range of environmental and energy issues since 1977); making representations to Government Departments; conducting surveys and other projects; conducting seminars and the publication of a Quarterly, "Alam Sekitar", since 1976. Noteworthy projects are a water quality survey, and solid waste management study of the Kang River Valley. Recently, the Society has been monitoring lead levels in the atmosphere at the areas of heavy traffic congestion in Kuala Lumpur. The project component of the Society does not discriminate between potential funding sources. It merely stipulates three conditions upon which it will accept funds. First, the total funds must be committed prior to the commencement of the project. Second, the sponsor must agree not to interfere with the methodology for the conduct of the project and third, there must be no attempt to suppress the publication of the project's findings. Obviously, all these stipulations were designed to guarantee an independent assessment of the problem under investigation. Perhaps these have been too uncompromising for potential donors.

With regard to its other field of activity (acting as a watchdog over the DOE and the implementation of the Environmental Quality Act) the Society has been relatively successful. Although most of the Society's press statements have berated the DOE for not implementing the EQA as stringently or as effectively as it should, and although most of the Society's relations with the DOE have been extremely adversarial there are instances which illustrate a willingness for mutual cooperation.

For example, the DOE allowed the Society to comment on the draft Palm Oil Regulations made pursuant to the EQA. Recently, the Society has issued an assessment of the environmental performance of the Third Malaysian Plan. As to be expected, this review focusses namely on assessing the impact of the DOE, the EQA and regulations made under it.

The Consumer Association of Penang (CAP) and Malaysia FOE, Sahaba Alam Malaysia

Organised in the late sixties, CAP now has a membership of 300,000 people who subscribe to the organisation's monthly paper, UTUSAN KONSUMER. Originally a consumer-related organisation, CAP has become more involved in environmental issues. In 1978, CAP produced an award winning 22 minute film entitled "Crises in the Malaysian Environment". In addition, CAP has produced a slide show, "The Ugly Side of Malaysia", and several books. Finally, CAP produces four radio programs which report on environmental issues over three separate language networks. While much of CAP's work is concerned with responding to consumer's complaints as well as surveys and testing, CAP also carries out an extensive education program in more than forty schools, holds seminars, carries out an extensive education poster campaign, etc. In 1977, CAP helped organise SAHABAT ALAM MALAYSIA, the country's branch of Friends of the Earth (FoE). Sahabat Alam Malaysia takes up such various environmental issues as the problems caused by the depletion of water and fish resources, the indiscriminate felling of forests, the extinction of wildlife, the destruction of the country's natural resources, etc. In addition, FoE Malaysia has been working closely with communities hard hit by pollution from industries and palm oil mills, farmers who suffer damage to their lands and crops from waste discharge, fishermen who are adversely affected by the depletion of fish resources, etc.

One glance at a compilation of CAP-inspired press cuttings collected over the years reveals an organisation which has become very vocal indeed. Further, the educational programs sponsored by CAP have produced a growing awareness of the environmental problems which now have beset Malaysia. On balance CAP appears to be gaining momentum in its drive to become a watchdog over those officials concerned with environmental matters.

In addition to these two vocal NGOs there are other groups whose activities are equally important. For example, there is the Malayan Nature Society (MNS). Founded in 1940, this Society is actively involved with the conservation of wildlife and natural resources. It organises seminars and excursions and publishes two quarterlies - the "Malayan Nature Journal" and "Malayan Naturalist". Another noteworthy NGO is the Batu Caves Association. This Association was formed in 1964 as a response to the concern raised by the environmentally negative effects of quarrying activities at the Batu Caves. Its main objectives are the preservation of the ecology of the caves and the control of activities which threaten to detract from the religious significance of the caves.

What has been the impact of these organisations? Has the overall level of awareness of environmental and conservation issues increased among the ordinary man in the street? This is a very difficult assessment to make. Admittedly, more pollution-related and conservation issues are published in local newspapers than in many other countries. But that may not necessarily be indicative of heightened awareness among the general public to such an extent that they may exert pressure on politicians and the government. Of course the examples of the Batu Caves and the Endau-Rompin controversy are impressive, but these are unique cases.

The problems there were localised, and peculiar in nature - not the ordinary environmental problem. In the one case, a threat was posed to a landmark of extreme religious significance while in the other the government was seen to be renegeing on its decisions to set up a National Park. However, these are not the ordinary run-of-the-mill environmental problems - to date, there has been no example of villagers whose water supply is polluted by a palm oil mill (a very common occurrence) making such repeated and vocal representations to the relevant authorities. Thus, until such time as the awareness generated by the NGO's visibility is translated into demands for accountability from polluters or government agencies in charge of pollution control and conservation, it is inaccurate to say that these NGOs have achieved their objectives of heightening the awareness of environmental issues among the general public.

The successes they have had so far have been impressive. However, two questions remain to be answered: first how do these impressive successes in publicising pollution issues compare with these NGO's impact on the decision makers? And secondly, how long can this momentum last? These two questions are inextricably intertwined. If the NGOs manage to have a positive impact on decision makers, without antagonising them unduly, one can safely say that their existence as organisations entitled to freedom of speech, free press, etc. will be guaranteed. Unfortunately, one does not have to visit the country to realise that some of these NGOs have adopted an adversarial or confrontational role in their relations with the government. It is fair to argue that this approach may have already had its negative impact. The polemic approach adopted by the Malaysian NGOs may also have backfired in a number of ways - in fact there is a school of thought which attributes the non-publication of the mandatory annual report of

the DOE to this approach (the reports have been published but none have been made public), and the DOE has been in existence for seven years.

The foregoing is an attempt to give an objective assessment of the true impact of these NGOs. They have an important role to play and there is tremendous potential for foreign cooperation with these organisations. Nevertheless a word of caution is in order here. It has taken many countries in the developing world a long time to adopt the notion of sustainable development and to inject environmental concerns into development planning. For Malaysia, this is not a mean achievement because its overall development objectives put an inordinate amount of pressure on all the country's resources. The role of the NGOs in this overall plan is to put the issues in the right perspective - to ensure that a proper balance is maintained between environmental goals and development objectives, rather than set undesirably high environmental standards. It is possible to play the role of a watchdog without necessarily polarising the parties involved.

CHAPTER ELEVEN

Conclusions and Recommendations

There have been some impressive success stories in environmental management in Malaysia. The issuance of regulations under the Environmental Quality Act, 1974, has marked the beginning of a system of standard-setting. These regulations have encouraged the development of an indigenous technology to control one of the major water pollution sources in the country - palm oil mill effluent. National policies have been issued for agriculture and forestry. A contingency plan has been prepared which will initiate remedial action in the event of marine disaster in the Strait of Malacca.

In spite of these noteworthy achievements, there are some vital areas where the system could benefit from some improvement. The legal, institutional and administrative structure which has evolved over the years to deal with Malaysia's environmental problems can be described as a sprawling federal administrative machinery with widespread responsibilities and a wide-ranging armory of legislation. However, in actual implementation of policies and laws, this machinery barely scrapes the surface of the main issue at hand - environmental management which is integrated with national development planning. In addition there are overlaps in federal and state government responsibilities; the varied array of legislation has led to discrepancies in standard-setting; and due to constitutional limitations, the federal agency which was set up to "promote, encourage, coordinate and carry out planning in environmental management ..." has turned into a regulatory agency for pollution control only. Further, there are the following specific major deficiencies for which remedial action can be suggested:

Planning for Environmental Management

The inclusion of an entire chapter on environmental management in the national development plan (The Third Malaysia Plan 1975-1980) was a major step the importance of which cannot be overestimated. Its omission, both in the mid-term review of the TMP and in the Fourth Malaysia Plan (1981-1986) is a matter of concern and may signify different things - non-achievement of a majority of the goals set out in the TMP, a diminished or diminishing interest in environmental matters at the policy-making level, etc. The fact that this chapter was drafted with the World Bank's assistance may support this latter assertion. The lack of a coordinating agency for overall environmental policy may have been a contributing factor, as there was no single agency which had primary responsibility to prepare a draft policy. (The DOE would have been the obvious choice, but as has been pointed out, its mandate, by necessity, can extend only to pollution control.) While it can be expected that some aspects of environmental policy will be reflected in parts of the FMP (health, forestry, etc), the omission of an entire chapter may have serious repercussions on overall attitude to environmental matters. The fact that the environment is no longer given the pride of place it held in the TMP will leave the fate of environmental policy within the overall development strategy either hanging in the balance (at best) or simply inconsequential (at worst).

Federal/State Interaction

The sharp distinction between the federal and state authorities' regulatory powers is a root cause of many of the problems with the legal and administrative machinery. Unless a constitutional revision is effected which reverts all power to either state or federal authorities this will continue to pose problems. However, such a drastic action is not warranted if another solution can be sought which will make innovative use of the existing institutions. As there

are already too many well-established institutions, all that is required is a small unit which genuinely plays a coordinating role with these federal and state authorities. The DOE can play this role quite effectively but only within the framework of an overall national policy. Hence, the importance of a national environmental policy in the development plans. If the DOE assumes such powers (which will be within its mandate under the Act), it will go a long way towards providing the badly needed coordination of environmental policy and its implementation.

The Environmental Quality Council

The narrow representation on this Council excludes the two groups which have the most direct impact on the country's economy - the state governments of Peninsular Malaysia and the Ministry of Primary Industries, which provides 70% of Malaysia's export earnings. Even with regard to discharging its limited functions (advising the Minister), this represents a serious handicap. A convincing argument can be made for the need for a stronger Council which has powers beyond merely advising the Minister. Such a Council, which will establish environmental policy and oversee its implementation, in effect the equivalent of the National Land Council perhaps, is long overdue. Extending the powers of the Council in this manner will contribute towards solving the problem of lack of coordination and lack of an appropriate agency to formulate national environmental policy. While it is premature to suggest the mechanics for achieving this (constitutional revision, legislative revision, etc.), this report merely points out the need for such powers and how important it is for federal authorities to give serious consideration to this need.

The DOE

The DOE will need to reexamine the role it wants to play in overall environmental planning and restructure itself accordingly. With regard

to the role it is currently playing, two improvements are in order. First, it is a regulatory agency which does not have any legal personnel on its staff. It would be useful to establish an environmental law division in the DOE to handle prosecutions, revisions, regulations, etc. In addition, the DOE may need to arrange for other expertise - for example, hydropower specialists, road construction experts, personnel experienced in port and harbor development, etc. - to coordinate government activities in these fields. Such expertise could be obtained by short term consultancies, or by personnel seconded from the appropriate institutions on an as-needed basis. Second, the DOE needs to issue information on waste treatment technology in the palm oil industry. The DOE has refused to do this to date because it is concerned about the possibility of being accused of compromising its integrity if it recommends one single technology. It is also concerned about a possible lack of authority to provide such information. These fears are unfounded. The information that is required is of a non-judgemental nature and it is inconceivable that a branch of the Ministry of Science, Technology and Environment should be precluded from issuing vital information on the technological processes for environmental control.

FELDA

The DOE is faced with the anomalous situation in which it finds it easier to control and regulate the activities of the private sector while it has little control over FELDA (the Federal Land Development Authority), which produces at least 25% of Malaysia's crude palm oil. FELDA's reason for failing to meet the standards in the regulations is the unavailability of land on which to carry out the effluent treatment process! The DOE, after levying many fines against FELDA, had decided that the problem can only be resolved a cabinet level, with the two ministers involved (Minister of Science, Technology and Environment and Minister of Land and Regional Development) deciding how best they can steer

their ministries off this collision course. An early solution to this problem is imperative.

Legislation

Even a selective list of laws on environmental management indicates a prolific number of laws which have resulted in discrepancies. These laws need to be consolidated in order to set appropriate standards for environmental management. The various federal ministries and state authorities will have to cooperate with the Attorney-General's Chambers to decide on the mechanics and time frame for achieving this objective.

Environmental Impact Assessment

After extensive consultations with the relevant government agencies, the DOE has prepared guidelines on environmental impact assessment for by the Prime Minister's Department. The fact that the proposals took such a long time to be prepared is an indication of the issues at stake and the need for a well-thought out strategy. While there is evidence that some companies and industries are already conducting environmental impact assessments of proposed projects, these are isolated examples covering in some cases, projects which are notorious for their adverse environmental impact, and in one case, involving a World Bank loan. Criticisms against the content of the proposals have been summarised in Chapter 9. However some doubts still remain. First, these proposals are to be in the form of guidelines (non-statutory control) with which state governments are requested to comply. The deficiencies inherent in this proposal apply to all of the DOE's non-statutory methods of control - enforcement difficulties, a characteristic evil the division of power between federal and state governments. However, there appears to be no compelling reason for the DOE to adopt this approach. The

proposals can be modified and put in the form of legislation or incorporated into existing legislation in order to give EIA the force of law. Legislative precedence for such an approach can be found in The Town and Country Planning Act, 1976, for example. Thus, it is recommended that the EIA proposal should be adopted as soon as possible but in the form of a legislative enactment.

Coastal Zone Management

There is a lack of planning for coastal zone management for Malaysia today. With the creation of a 200 mile exclusive economic zone, the scope of marine area under national jurisdiction will be about four times the total land area. This vast expanse of territory will require a clearly defined policy and laws for effective management. Therefore, it is recommended that the DOE, Fisheries Department, Department of Transportation and the State authorities should consult with each other to formulate this policy and law.

The Strait of Malacca

Given that the three littoral states (Malaysia, Singapore, and Indonesia) each have contingency plans of their own, as well as an overall agreement in principle to cooperate in the event of a major oil spill, it would appear that a single master contingency plan specifying detailed joint action might be a more effective instrument to control maritime disasters in the Strait. This recommendation is advanced for one main reason. Marshalling of the resources of all three countries will ensure that effective remedial action will occur immediately rather than await resolution of jurisdictional problems. Also, through drills and practice alerts under an existing contingency plan, the three countries would be in a much better position to take effective action against a major oil spill as opposed to becoming involved jointly on an ad hoc basis.

Batu Caves

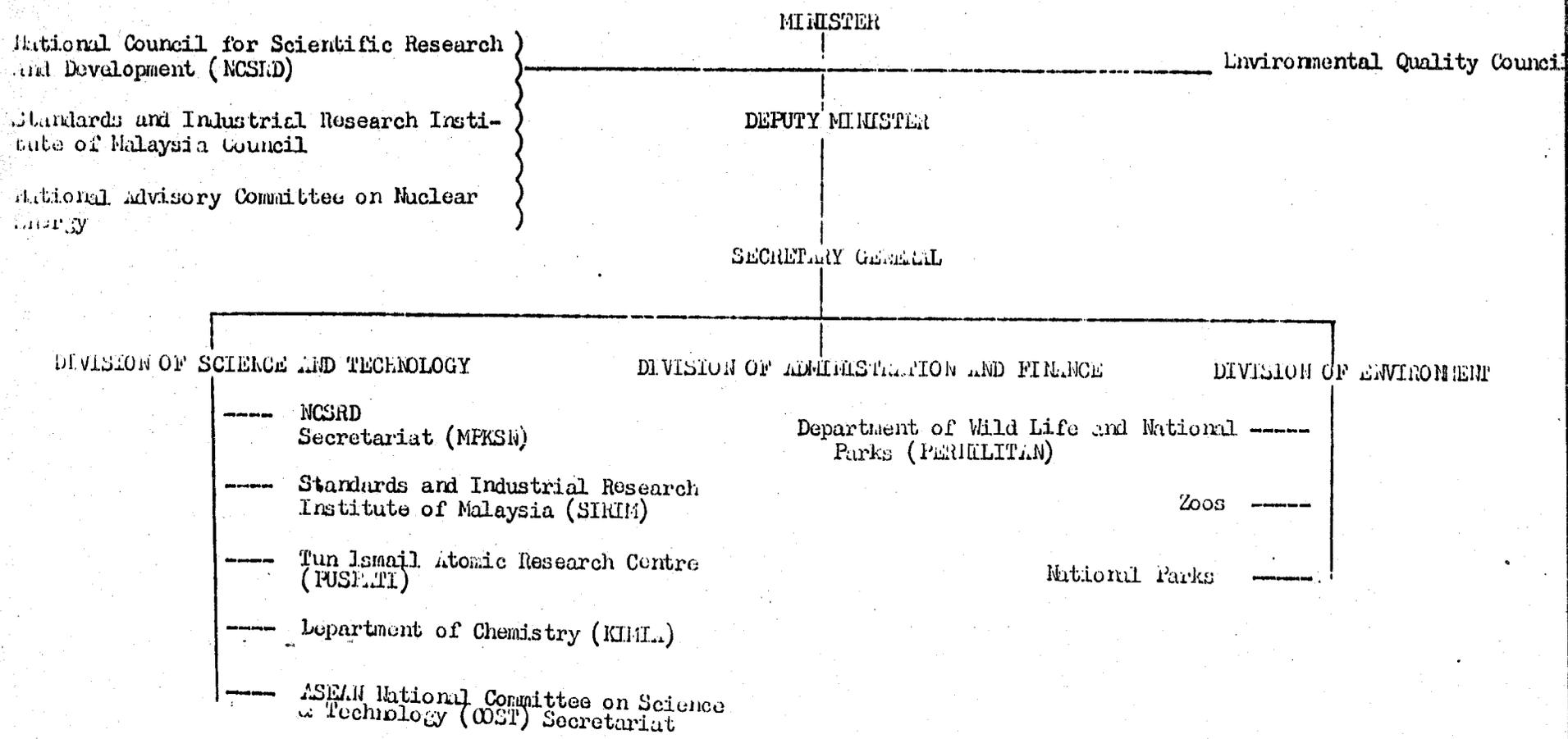
The Batu Caves contretemps is a perfect illustration of the inertia that can arise as a result of the divisions of power between the federal and state authorities. As neither the DOE nor the Department of Wildlife and National Parks have been able to establish the Batu Caves as a National Park in accordance with the national environmental policy, it is recommended that the Ministry of Youth, Culture and Sports should step into the picture and have the area preserved as a cultural heritage.

Pesticides

Many criticisms have been levelled against the Pesticides Act, which came into force in April of this year. Although it is an impressive piece of legislation it does not go quite far enough in regulating the importation, sale and use of pesticides. Due to the important role which agriculture plays in the country's economy, the demand for pesticides will probably increase but their use should be treated with caution if ecological hazards are to be avoided.

The foregoing recommendations are proposed as ways in which Malaysia's fairly well-established legal and institutional structure for environmental management can be strengthened. In sum, much has already been done in Malaysia to manage the country's natural resources but this process alone has created its own bureaucratic obstacles and policy problems, which deserve attention now.

ORGANIZATION OF THE MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT, MALAYSIA

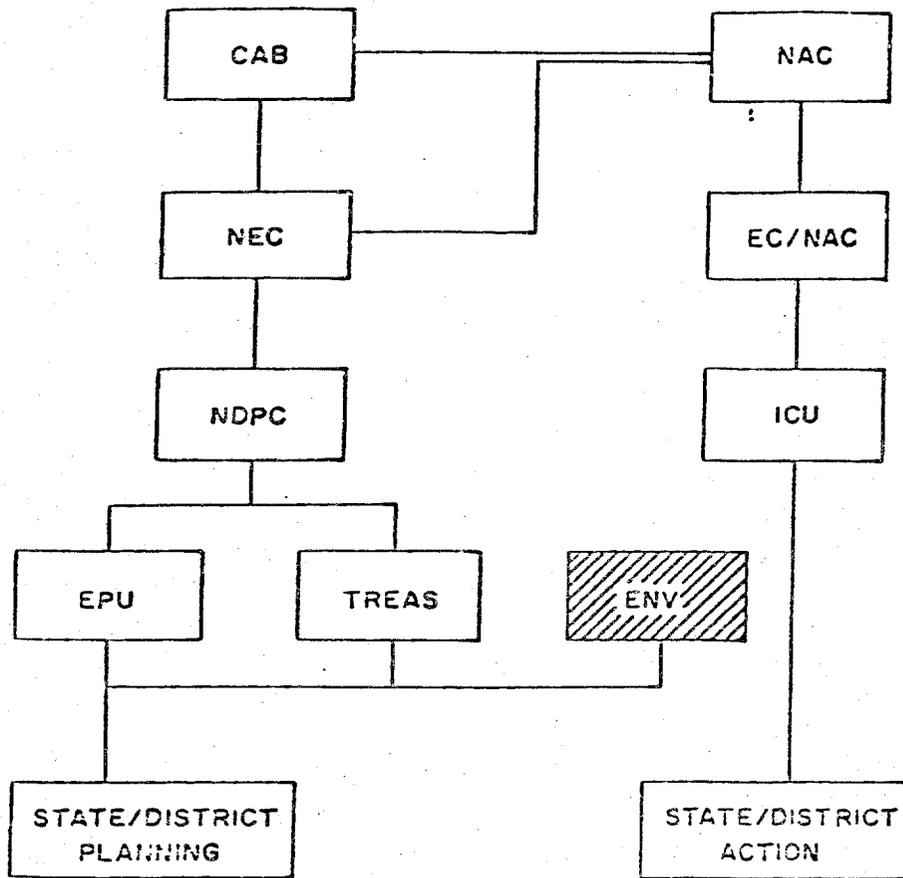


Source : Science & Technology in Malaysia, 1975, Government of Malaysia, Kuala Lumpur.

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Appendix II

Simplified Decision Structure



PLANNING COLUMN

IMPLEMENTATION COLUMN

- CAB - Cabinet
- NAC - National Action Council
- NEC - National Economic Council
- EC/NAC - Executive Committee of NAC
- NDPC - National Development Planning Council
- ICU - Implementation/Co-ordination Unit
- EPU - Economic Planning Unit
- TREAS - Treasury
- ENV - Ministry of Science, Technology, and Environment

Source: United Nations Task Force on the Human Environment: Project Findings and Recommendations. United Nations, New York, 1978.

Appendix III

Pollution Control Legislations and Environmental Guidelines

Environment Division,
Ministry of Science, Technology
and Environment

Pollution Control Legislations and Regulations

1. Environmental Quality Act 1974, Act 127.
2. Environmental Quality Act 1974.
Environmental Quality (Prescribed Premises)(Crude Palm Oil)
Regulations 1977. His Majesty's Gazette. P.U.(A)342.
3rd Nov. 77. Government Printers. Pgs.1575-1584.
3. Environmental Quality Act 1974.
Environmental Quality (Licensing) Regulations 1977
His Majesty's Gazette P.U.(A)193. 28th June, 1977.
Government Printers. Pgs.1272-1275.
4. Environmental Quality Act 1974.
Environmental Quality (Clean Air) Regulations 1978.
His Majesty Gazette. P.U.(A)280. 28th Sept., 1978.
Government Printers. Pgs.733-755.
5. Environmental Quality Act 1974.
Environmental Quality (Compounding of Offences) Rules 1978.
His Majesty's Gazette. P.U.(A)281. 28th Sept., 1978.
Government Printers. Pgs. 758-759.
6. Environmental Quality Act 1974.
Environmental Quality (Prescribed Premises)(Raw Natural Rubber)
Regulations 1978. His Majesty's Gazette P.U.(A)338.
30th Nov., 1978. Government Printers. Pgs.905-915.
7. Environmental Quality Act 1974.
Environmental Quality (Sewage and Industrial Effluents)
Regulations 1979.
His Majesty's Gazette. P.U.(A)12. 1st February, 1979.
Government Printers. Pgs.56-76.
8. Road Traffic Ordinance 1958.
Motor Vehicles (Control of Smoke and Gas Emission) Rules 1977.
His Majesty's Gazette. P.U.(A)414. 22nd Dec., 1977.
Government Printers. Pgs.2165-2169.
9. Road Traffic Ordinance 1958.
Road Traffic (Compounding of Offences)(Amendment) Rules 1979.
His Majesty's Gazette. P.U.(A)43. 8th March, 1979.
Government Printers. Pgs.406.

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Environmental Guidelines

1. Guidelines on the siting and zoning of industries.
(Final Draft adopted by National Land Council).
2. Guidelines on Soil Conservation. (Draft for comments).
3. Guidelines on Solid Waste Management.
 - (a) Recommended Code of Practice for the Disposal of Solid Waste on Land. (Draft for comments).
 - Part I - Recommended Code of Practice for the selection of Disposal Sites.
 - Part II - Recommended Code of Practice for land-fill Development and Management.
 - (b) Recommended Code of Practice on the Generation, Characterisation and Handling of Solid Wastes (Pending).
 - (c) Recommended Code of Practice on the technology of treatment and disposal of solid wastes and hazardous materials (Pending).

Environmental Impact Assessment

The Environmental Impact Assessment Handbook - Procedure and Guidelines 2nd Draft 29th December 1979.

GKS/cl.s.

19/5/80.

Best Available Document

LEGAL, REGULATORY, AND INSTITUTIONAL ASPECTS OF ENVIRONMENTAL AND NATURAL RESOURCES
MANAGEMENT IN MALAYSIA

Appendix IV List of Sectoral Laws

The Town Boards Enactment (FMS Cap I37)
Mining Enactment, 1927 (FMS Cap I47)
The Drainage Works Ordinance 1954
The Land Conservation Act, 1960
Fisheries Act, 1963
The National Land Code, 1965, Act 56
Petroleum Mining Act, 1966, Act I5
Continental Shelf Act, 1966
Factories and Machinery Act, 1967
Waters (Amendment) Enactment, amending Waters Enactment (FMS Cap I46)
Malaria Eradication Act, 1971 Act 52
Protection of Wildlife Act, 1972, Act 76
Pesticides Act, 1974
Street, Drainage and Building Act, 1974, Act I33
Local Government Act, 1976, Act I7I
Town and Country Planning Act, 1976, Act I72
Forest (Amendment) Act, 1979, amending Forests Enactment, 1937 (FMS Cap I53)
National Parks Act, 1980, Act 226

LEGAL, REGULATORY, AND INSTITUTIONAL ASPECTS OF ENVIRONMENTAL AND NATURAL
RESOURCES MANAGEMENT IN MALAYSIA

Appendix V

List of People Interviewed

A. Ministry of Science, Technology and Environment - Kuala Lumpur

Hon. Tan Sri Ong. Kee Hui, Minister

Division of Environment

Mr. S. T. Sundram, Director-General

Enc. Ghazali bin Mohd Noor, Principal Assistant Secretary

Mr. A Maheswaran, Director, Water Pollution Control Unit

Mr. K. S. Goh, Director, Air Pollution Control Unit

Mr. Patrick Tan Hock, Officer, Marine Pollution Control

Ms Hasmah Harun, Public Relations and Information Officer

Ms. Narimah, Effluent Control Inspector

Department of Wildlife and National Parks

Enc. Mohamed Khan, Director-General

Mr. Louis Ratnam, Senior Research Officer

B. Ministry of Primary Industries

Enc. Ghazali bin Mohd Amin, Undersecretary

Mr. Chue Hang Cheong, Minerals Economist, Mines Department

Mr. Chun Tet Foong, Deputy Senior Inspector of Mines, Mines Department

Dato Muhammad Jabil, Director-General, Forestry Department

C. Ministry of Agriculture and Rural Development

Mr. Ahmad Salimi Ismail, Deputy Principal Development Division

Dr. Pathan S. Ali, Deputy Director-General, Fisheries Department

Mr. Balasubramaniam, Department of Agriculture, Crop Protection Branch

Mr. Chong Chin Meow, Drainage and Irrigation Department

C. continued:

Dr. Mustaffa Babjee, Livestock Division

Mr. Ignatius Wong, Department of Agriculture, Soils Branch

D. Prime Minister's Office - Economic Planning Unit

Mr. K. Kananatu, Energy Projects Division

Mr. Kamarulzaman b. Abd Ghani, Energy Projects Division

En. Saderi Jack, Industry Division

E. National Petroleum Corporation - Petronas

Mr. A. Abuzarin

F. Elimina Palm Oil Mill, S-Buloh

Mr. Loh, Assistant Manager

Mr. Velu, Effluent Controller

G. Antara Oil Palm Pollution Control Sdn. Vhd.

Mr. Mike Choong, Marketing Manager

H. Universiti Pertanian Malaysia

Professor Ariffin Suhaimi, Dean, Faculty of Science & Environmental Studies

I. University of Malaya

Professor Jose Furtado, Department of Zoology

Mr. Sulaiman Abdullah, Faculty of Law

J. Environmental Protection Society of Malaysia, EPSM

Mr. Gurmit Singh, President

K. Consumers Association of Penang

Mr. Rajeandran, Environmental Research Officer

- L. Inter-Governmental Maritime Consultative Organization (IMCO)
Capt. John L. Thompson, Technical Officer
Mr. John Wenhan, Environmental Advisor

- M. Overseas Development Administration (ODA), HMG
Mr. David Hall, Environmental Advisor

- N. Embassy of the United States of America, Kuala Lumpur
Mr. James McGlinchey, Economic/Commercial Officer

- O. East-West Environment and Policy Institute - East-West Center, University of Hawaii
Dr. Dick Carpenter, Research Associate
Mr. Abu Bakr Jafaar

Legal, Regulatory and Institutional Aspects of
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in Malaysia

Appendix VI

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Appendix VII

IIED PROJECT - LEGAL AND INSTITUTIONAL ASPECTS OF ENVIRONMENTAL AND NATURAL RESOURCES AND HOW THEY ARE HANDLED IN DEVELOPING COUNTRIES

Introductory Summary of the IIED Project: Legal, Regulatory, and Institutional Aspects of the Protection, Management and Conservation of Natural Resources and the Environment in Selected Developing Countries.

Background

In March 1980, IIED began a USAID-funded project to review the operations of legislation and institutions dealing with environment and natural resource management matters in particular developing countries. This review is a component of a larger AID/NPS information-gathering and generating project No. 931-1029, "Environment and Natural Resources: Expanded Information Base". The goal of the overall project is to assist developing countries improve their capability to conserve and manage their natural resources and protect their environment. The overall AID purpose is to provide Regional Bureaus and AID missions with information useful to the design of activities that will help achieve this goal.

Several components make up this large project.

Review papers will be prepared in the following areas:

- Natural resources and environment surveys: state-of-the-art review.
- Legal, regulatory and institutional aspects of the protection, management and conservation of natural resources and the environment.
- Humid tropics: review of selected ecological and related developmental problems.
- Regional projections of natural resources scarcities and environmental degradation.
- Environmental Baseline data: a survey of methods.

Other components of the project include case studies, development of guidelines for project design in certain environmentally sensitivity subject areas, and communication and dissemination activities to ensure the use of project results.

Since other review papers will focus on specific scientific and technical issues, Review Paper No. 2 will concentrate on the capacity of environmental and natural resources laws and related institutions in the selected countries. The project will give a country-specific overview of the operations of such laws and institutions in development activities ranging from government decision-making to ground level implementation.

Review Paper No. 2

The IIED legal and institutional review project will be conducted in collaboration with the concerned Agency for International Development (AID) and National Park Service (NPS) staff, and with the cooperative assistance and collaboration of host country officials and institutions.

The primary focus of the project will be on the countries selected for review. Country selection has been guided by several factors, the major ones being an effort to provide some range of geographic, institutional and economic representation and the ability to develop contacts and collaborative arrangements in the selected countries.

The initial project activity will involve identification and review of existing information on each country's laws and institutions related to the environment and natural resources management. To the extent possible, this background research also will strive to identify relevant customary laws and practices. Principal sources for information will be the U.S. Library of Congress, the Law Center of the International Union for the Conservation of Nature and Natural Resources (IUCN), the Legal Office of the U.N. Food and Agricultural Organization (FAO), the United Nations Environment Programme (UNEP), the World Bank, the U.S. Agency for International Development (AID), and other U.S. federal agencies.

The thrust of each country study will be an analysis of the inter-relationships between the country's environmental and natural resources management policies, laws (both modern and traditional) and institutions and its decision making processes. This analysis will examine the principal elements of these laws and policies and how they evolved and are implemented. The examination will be useful not only for the countries involved; it will also be valuable for donors and other developing countries by providing some insight into the nature of the processes and the effectiveness of different approaches in serving particular needs and systems.

While the study will concentrate on only four countries, on a regional basis other countries will be referenced in the main legal reviews through comparative work in certain relevant natural resource sectors. The most relevant resource sectors in the study countries will be the point of reference for such further regional comparisons. This comparative perspective will be as extensive as available resources permit.

Field visits will be made by IIED project staff to the selected countries. The visits will focus not only upon understanding the extent and effect of relevant laws, regulations and institutional arrangements, but also upon the usefulness and applicability for other countries of principles on which these arrangements are based. The field work will provide an opportunity to work with local experts identified for the project, as well as establish a basis for collaboration with other local groups or individuals interested or involved in this subject area. The exercise also will expand the network of contacts for follow-up work and collaboration in the future.

End Product

Three distinct products will be prepared for AID/NPS. The first will be a series of short papers which address the precise requirements of Review Paper no. 2: the legal, regulatory, and institutional aspects of the protection, management, and conservation of the environment and natural resources in each of the selected countries. These reports, which will be based primarily on country visits, collaboration with local experts, and a review of existing materials available in Washington and various international organizations. They will be evaluative of the processes and approaches used. Each of the country reports will also contain some comparative discussion on certain problem sectors, selected environmental regulation and institutional regimes which lend themselves to some comparability with other country approaches in the region.

The second major product of the study will be a crisp report of more than fifty pages designed for use by field officers of USAID and also we hope by many other members of aid agencies working in the field. This report will draw on the country papers and compare approaches taken by the selected countries and examined as part of the comparative work. It will identify possible project areas for further National Parks Service and AID case studies.

The third major product of the study will be an annotated bibliography of the sources of information used for the study countries, as well as other major documents identified in the course of the comparative work.