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Environmental Management and Conservation in Malaysia: Problems and Prospects for the 1990s

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ABSTRACT

The Malaysian environment is being managed to overcome problems that have arisen from social and economic development. The problems of the environment can be grouped into five main areas namely air pollution, surface run-off, soil erosion, loss of habitate and of animal species. The Environmental Quality Act 1974 attempts to control and reduce the problems. But several problems still persist including sewage, animal waste, industrial effluents and air pollution. The solution to the problems rests with the relevant authorities to take more effective measures.

ABSTRAK

Alam sekitar Malaysia diurus untuk mengatasi masalah-masalah yang terserlah berikutan pembangunan sosial dan ekonomi. Masalah alam sekitar yang masih mendesak boleh dikumpul dalam lima kumpulan: pencemaran udara, aliran permukaan, hakisan tanah, kehilangan habitat dan spesies haiwan. Akta Kualiti Alam Sekitar 1974 cuba membendung kemerosotan alam sekitar secara menyeluruh. Bagaimanapun, beberapa masalah alam sekitar seperti sisa-sisa buangan dan kualiti udara yang semakin merosot masih lagi berterusan. Penyelesaian terhadap masalah-masalah itu bergantung pada pihak berkuasa untuk bertindak dengan lebih berkesan lagi.

INTRODUCTION

Environmental management objectives in Malaysia are guided by fundamental environmental policy directives elucidated in the Third Malaysia Plan (1976-1980) to the Six Malaysia Plan (1991-1996) and are shown in Table 1. Although the Constitution does not spell out the word 'environment', specifically it has provided a sufficient basis for the federal government to enact laws and regulations for "the prevention, abatement, control of pollution and enhancement of the environment..." (Law of Malaysia, Act 127, the Environmental Quality Act of 1974). By virtue of its emphasis on natural resource assessment, as shown in the environment-related terms used in

TABLE 1. Policy objectives on environment
(re 3rd to 6th Malaysian Plans)

1. to maintain a clean and healthy environment;
2. to maintain the quality of the environment relative to the needs of the growing population;
3. to minimise the impact of the growing population and human activities relating to mineral exploration, deforestation, agriculture, urbanisation, tourism, and the development of other resources on the environment;
4. to balance the goals for socio-economic development and the need to bring the benefits of development to a wide spectrum of the population against the maintenance of sound environmental conditions;
5. to place more emphasis on prevention through conservation rather than on curative, inter alia by preserving the country's unique and diverse cultural and natural heritage;
6. to incorporate an environmental dimension in project planning and implementation, inter alia by determining the implication of the proposed projects and the costs of the required environmental mitigation measures through the conduct of Environmental Impact Assessment studies; and
7. to promote cooperation and increased coordination among relevant Federal and State authorities as well as among the ASEAN Governments.

Table 2, the constitution had to a certain extent effected a far-reaching and comprehensive coverage of environmental matters.

ENVIRONMENTAL ADMINISTRATION

The responsibility to administer the various environment-related laws rests with a number of federal, state and local government agencies (Table 3)

TABLE 2. Malaysia constitutional terms relevant to environmental management

Resource	Activity	Issue/Problem	Response/Solution
Wild Animals	Animal Husbandry		Planning
Wild Birds	Shipping		Protection
Turtle	Navigation		Control
	Fisheries		Rehabilitation
Riparian Rights			
Parks	Mining	Obnoxious Trade	
Lands	Industry	Dangerous Trade	
Agriculture	Drainage/	Dangerous Machinery	
	Irrigation	Poisons	
Forest	Works & Power	Silt & Soil Erosion	
Public Health		Dangerous Drug	Sanitation & Medicine

TABLE 4. Malaysia: agencies directly involved in environmental matters

Environment-related Subject Matter	Agency
1. Aircraft Safety and Noise Control	Civil Aviation Department
2. Animal Husbandry	Veterinary Services Department
3. Coastal Erosion Protection	Drainage and Irrigation Dept.
4. Energy	Ministry of Energy, Post and Telecommunication
5. Exclusive Economic Zone (EEZ)	Prime Minister's Office
6. Fisheries & Marine Parks	Fisheries Department
7. Forest	Forestry Department
8. General Cleanliness/Streets/ Buildings/Drainage	Local Government
9. Geology & Hydrogeology	Geological Survey Department
10. Industrial Pollution Control & Prevention through Environmental Impact Assessment (EIA)	Department of Environment
11. Land and Mines	Department of Land & Mines
12. Mining	Department of Mines
13. Naviational Safety	Marine Department
14. Nuclear Radiation	Atomic Energy Licensing Board
15. Ocupational Safety	Factories and Machinery Department
16. Pesticides	Department of Agriculture
17. Petroleum	Petronas
18. Physical Planning	Town and Country Planning Department
19. Planning	Economic Planning Unit
20. Public and Occupational Health	Health Services Department
21. Radioactive substances	Nuclear Energy Unit
22. Road Vehicles	Roads Transport Department
23. Social-Economy	Socio-Economic Research Unit
24. Soil Conservation	Department of Agriculture
25. Water	District Office
26. Water Irrigation	Drainage and Irrigation Department
27. Wildlife Reserve & National Parks	Parks

TABLE 5. Environmental laws & regulations

No.	Source	Regulations
1	Agro-based Water	o EQ (Licensing) Regulations 1977 o EQ (PP) (Crude Palm Oil) Regulations 1977 o EQ (PP) Raw Natural Rubber) Regulations 1978
2	Municipal and Industrial Waste Water Pollution	o EQ (Sewage and Industrial Effluents) Regulations 1979
3	Industrial Emissions	o EQ (Clean Air) Regulations 1978 o EQ (Compounding of Offences) Rules 1978
4	Vehicle Emissions	o Motor Vehicles/Control of Smoke and Gas Emission) Rules 1977 o EQ (Control of Lead Concentration in Motor Gasoline) Regulations 1985 o EQ (Motor Vehicles Noise) Regulations 1987
5	Toxic and Hazardous Waste Management	o EQ (Scheduled Wastes) Regulations 1989 o EQ (PP) (Scheduled Wastes Treatment and Disposal Facilities) Order 1989 o EQ (PP) (Scheduled Wastes Treatment and Disposal Facilities) Regulations 1989 o Promotion of Investments (Promoted Activities and Products) (Amendment) (No. 10) Order 1990
6	Environment and Development	o EQ (PP) (Environmental Impact Assessment) Order 1987
7	Substances that Deplete the Ozone Layer	o Customs Duties (Amendment) (No. 35) Order 1989

Ref: EQ - Environmental Quality
PP - Prescribed Premises

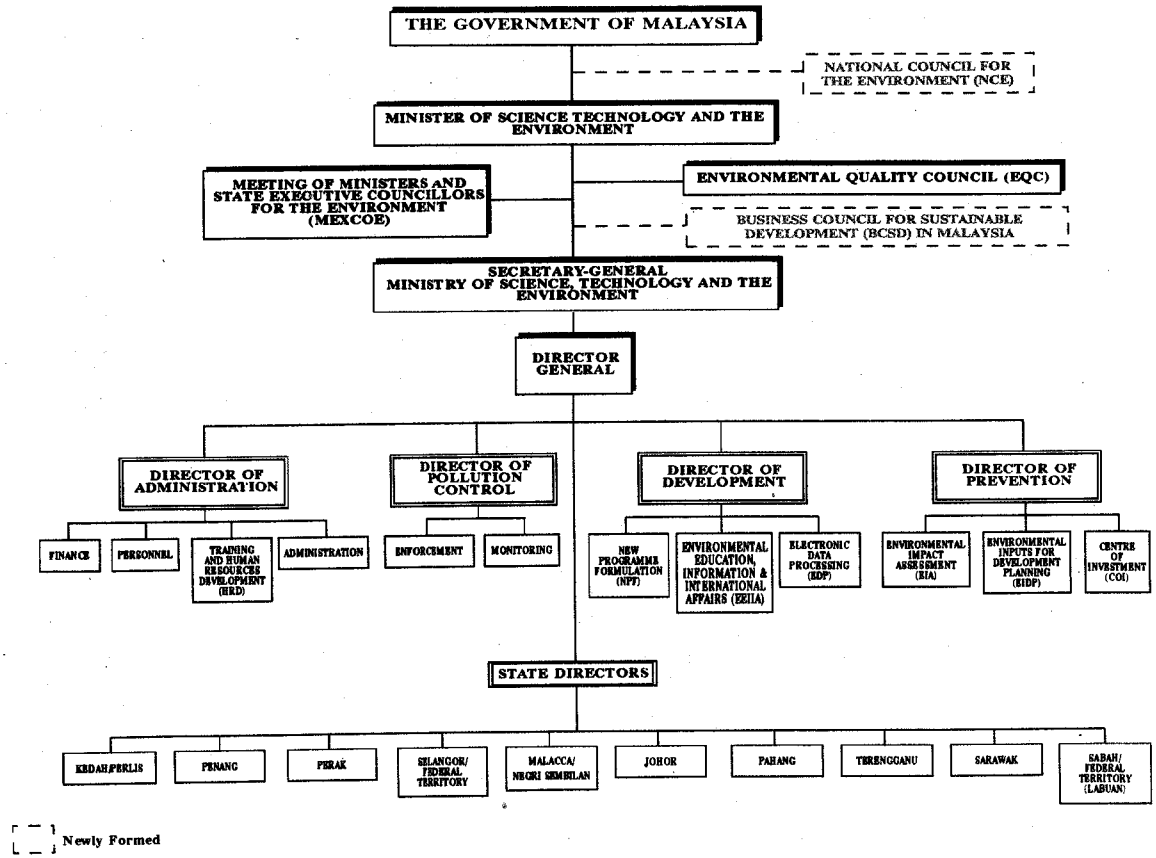

FIGURE 1. Malaysia: institutional framework for environmentally sound and sustainable development, 1991

TABLE 3. Malaysia: environment related laws

Year	Resource/Sector	Strategy	Legislation
1920	Water	Resource Use-Sustainability	Water Enactments
1935	Forestry		Forest Rules
1936	Fisheries		Fisheries Ordinance
1972	Wildlife		Wildlife Protection Act
1929	Mining	Human Safety and Welfare	Mining Enactments
1952	Road Transport		Road Transport Ordinance
1952	Merchant Shipping		Merchant Shipping Ordinance
1967	Industry		Factories and Machinery Act
1960	Population	Human Health	Public Health Ordinance
1974	Housing	Human Settlement	Local Government Act
			Street, Drainage and Building Act
1976	Township		Town and Country Planning Act
1974	Agriculture	Human Health	Pesticides Act
1960		Soil Conservation	Land Conservation Act
1980		Pollution Control	Piggery Enactments
1984	Radioactivity	Human Health and Safety	Atomic Energy Licensing Act
1985	Maritime Matters	Resource Use and Conflict	Economic Exclusive Zone Act 1
1960			Continental Shelf Act
1972			Petroleum Mining Act
1930	Nature	Conservation for Biodiversity	State Parks Ord.
			National Parks Act
1974	Environment	Pollution Control and Prevention	Environmental Quality Act (EQA)
1985		Integration of Environmental Dimension in all Activities	Amendment to EQA

where the jurisdiction of each, particularly in the earlier years, is clearly resource-orientated. In the present cabinet set-up, the Ministry of Science, Technology and the Environment has to shoulder the overall responsibility for environmental with the support of four implementing agencies, namely the Department of Environment, Department of Wildlife and National Parks, the Secretariat to the Atomic Energy Licensing Board and the Meteorological Services Department. Table 4 shows that at least 25 government agencies are directly involved in some aspects of the environment, with each agency being fully responsible for the subject matter within its competence. The current institutional framework of environmental management from the top to the lowest echelon is represented by Figure 1.

COORDINATING MECHANISMS

Given the vast scope of subject matter within the environment, a coordinating mechanism is imperative for environmental management to be of any consequence. Indeed, inadequate coordination of environment-related policies, strategies and programmes has for a long time been a major problem. Only in the late eighties had some kind of political involvement been shown in the annual meetings of the Federal and state ministers and the EXCO Members (MEXCOE) in charge of the environment. At administrative level the Environmental Quality Council (EQC), established under the Environmental Quality Act, 1974 advises the Minister in charge of matters pertaining to the Act and on any other matter referred to it by the Minister. Members of the EQC are drawn form the respective Ministries of International Trade and Industry, Human Resources, Health, Agriculture and Transport, the representatives of industries, universities and registered societies having interest in the environment (NGOs). Both MIXOE and EQC are indicated in Figure 1. In addition, there are other coordinating bodies, in particular the Federal-State Liaison Committee and the Inter-Agency Planning Group (IAPG) relating to the environment which is answerable to the Director-General of the Economic Planning Unit (EPU). EPU is turn is a member of the National Development Planning committee (NDPC) where such matters could be discussed and considered for general adoption or for system-wide decisions. These two, IAPG and NDPC, among others, are chaired by the Chief Secretary to the Government of Malaysia.

ENVIRONMENTAL ISSUES

A survey carried out amongst interest groups in the mid-eighties identified 55 environmental issues or problems in Malaysia, the top five places occupied by air pollution, surface water pollution, soil erosion, loss of habitat (terrestrial)

and wildlife species reduction. The Department of Environment's Environmental Quality Report of 1991 revealed sewage and animal wastes as major surface water polluters, followed by slit. Air pollution largely results from vehicular and industrial emissions, which, together with open burning of solid wastes (garbage), constitute the local contributors to the recurrent haze, a phenomenon that hits this region during the third quarter of the year.

IMPLEMENTING STRATEGIES

Since its inception in 1975 the Department of Environment undertakes the principal tasks of pollution abatement and control via the enforcement of the Environmental Quality Act 1974 and Regulations thereunder, and monitoring of the state of the environment. Monitoring is carried out on a regular basis in order to collect environmental data necessary for an assessment of the state of the environment, which is largely expressed in terms of air or water quality. The assessment in fact is a prerequisite to enforcement action, and the highest priority of such action is given to the most critical area and thus, the major contributing sources of pollution.

The above tasks are complemented by the Department's pollution-preventive and developmental programmes which encompass evaluation of Environmental Impact Assessment (EIA) reports, review and formulation of Regulations and Guidelines, promotion of formal and-formal environmental education, dissemination of environmental information and participation in external (bilateral, regional and international) affairs.

OUTSTANDING ISSUES AND CHALLENGES

Over the past 15 years much progress has been made in the control of agro-based wastes. Both the palm oil and rubber industries, once the major sources of water pollution, have drastically reduced their respective pollution loads largely through the licensing mechanism instituted by the EQA 1974, which operated on the 'polluters pay' principle and had induced the industries to invest in pollution control equipment and technology. The manufacturing sector, on the other hand, shows a record that varies industry to industry. Small and medium scale industries (SMIs) invariably have more difficulties due to either lack of space for a treatment facility or lack of capital to invest in one; and therefore take longer to make the necessary adjustments.

Both the agro-based and manufacturing industries, however, make up only 20 percent of the total organic pollution load. The bulk of wastes in water in fact, originate from humans or animals, the situation in rivers compounded by the large amounts of silt arising from poorly controlled earthworks. Of the local issues already identified earlier, these cannot be totally resolved by pollution control alone, and are described as follows.

SEWAGE

Feasibility studies on sewerage and sewage treatment have been completed for virtually all the major cities, municipalities and townships. However, interest rates imposed by multilateral funding agencies such as Asian Development Bank (ADB) and World Bank are so high so as to render all sewerage projects in Malaysia, other than in the city of Kuala Lumpur, non-viable, despite their socio-economic, health and environment importance. As yet, no political will to push sewerage projects is forthcoming as the calculated fees to be prevailing interest rates would be beyond the means of the average Malaysian household. The amount payable is far too much out of proportion to that paid for other utilities such as water and electricity. Above all, provision of sewerage has yet to acquire equal status with other infrastructure entities, viz. electricity, telephones, ports, roads and highways. One proposal is to channel the anticipated proceeds from the privatisation of these utilities to help finance sewerage and other urban service projects that include collection and disposal of both municipal and commercial refuse.

ANIMAL WASTE

The long outstanding problem of disposal of partially treated or untreated piggery waste has yet to be resolved. Pig rearing which is regulated by the Veterinary Service Department of the Agriculture Ministry, has all this while been treated as a 'backyard activity' and not properly regarded as an industry. The problem, which arises from the non-viability of treating the wastes of small-scale (although many) and scattered pig farms, is structural rather than technical and calls for a radical change to the industry. As this may mean resettlement and centralisation of these farms, it relates to the basic issue of land-tenure and land use. Contrary to what may be expected, the industry is thriving as it enjoys the benefits of the export market. Meanwhile, technology for both modern production and waste management exists and is commercially viable. The current stalemate is partly due to the attitude of the farmers to remain 'agrarian' in the commercial reality, and partly due to the state of ambivalence prevailing throughout the whole structure of the relevant State Governments in this serious matter.

AIR POLLUTION

Another area of concern is the deteriorating state of air quality, particularly in the Klang valley and major industrial growth areas due to the high concentrations of suspended particulates and dust generated by motor vehicles and uncontrolled burning of industrial, municipal and agricultural wastes. Due to the rapid increase of traffic volume and density in central business districts and congested trunk roads, the simple reduction of lead in petrol is no longer a sufficient measure of ambient lead in the atmosphere. The total

shift to the use of unleaded petrol in cities and even throughout the country is inevitable; and such use would facilitate the necessary installation of catalyctic converters in order to further reduce other pollutants, viz. hydrocarbons and the oxides of carbon and nitrogen. Excessive smoke from diesel engines remains a problem, and further progress would require necessary control of their importation, manufacturing and installations, where such an engine should not be under-designed nor its capacity over-specified.

Over and above all this is the necessity to reduce the alarming rate of increase in traffic volume which by itself has negated the effect of unleaded petroleum usage. With growing affluence two cars to a home gradually becomes the norm in urban areas, compounded by one occupant to a car on the road, which in turn is due to an inadequate public transportation. Plans towards a Light Rapid Transit (LRT) for Kuala Lumpur city have to be supplemented with improvement in other modes of transport. Promising moves towards this include a proposal to privatise all buses under the management of one company and promotion of natural gas as fuel for public-use vehicles such as taxis.

PROSPECTS

Solution to the issues discussed rests entirely on the foresight of the powers that be, their political will and cooperation between all implementing agencies concerned, be it the Ministry of Transport, Ministry of Housing and Local Government, Ministry of International Trade and Industry, or Ministry of Public works. Prospects of improving the situation may be guided by policy statements and developments as follows.

THE OUTLINE PERSPECTIVE PLAN

Two major planning documents exist at federal level to ensure that environmental management is implemented in an integrated manner, and these are The Sixth Malaysia Plan or 6MP (1991-1996) and The Second Outline Perspective Plan, 1991-2000: On Environment (OPP2). The latter in particular, assures that in the Nineties, greater emphasis will be placed on achieving economic development that is ecologically sustainable and balance. Environmental programmes under the OPP2 are to continue emphasizing the maintenance of a clean and healthy environment with ecological and climatic stability. Towards this end, strategies for environmental protection as well as nature and natural resources conservation will be incorporated in all development plans and programmes.

VISION 2020

The honourable Prime Minister in his Vision 2020 for Malaysia has stressed that "...we must also ensure that our valuable natural resources are not

wasted. Our land remain productive and fertile, our atmosphere clear and clean, our water unpolluted, our forest resources capable of regeneration, able to yield the needs of our national development. The beauty of our land must not be desecrated, for its own sake and for our economic advancement". With such commitment at the highest level we can be assured that environmental management in Malaysia would be driven by the political will what it deserves.

LEGAL AND INSTITUTIONAL AUGMENTATION

Efforts are underway to ensure effective and well-coordinated enforcement of environmental strategies and programmes by upgrading the regulatory machinery at the State and local government levels; one such effort being the Environmental Law Review, the first report of which has recently been submitted to the Minister of Science, Technology and the Environment for consideration at higher, possibly cabinet, level. Other policy instruments, including trade and economic measures, tax and financial mechanisms, nation-wide data-based management information systems, further R&D and technology development and transfer, are already built into the agenda of various central authorities, in particular the Ministry of Finance, in order to strengthen the existing institutional arrangements towards a protected environment.

PUBLIC AWARENESS

The promotion of greater awareness, responsibility and participation of the public and private sector as well as society in general, in achieving a clean and healthy environment, will be further intensified through mass media, education and training. One positive sign of corporate responsibility is the formation of the Business Council for Sustainable Development in Malaysia which works closely with the Department of Environment to carry out its programmes. The annual dialogue between the Minister of Science, Technology and the Environment and Non-Government Organisations (NGOs) seems to pool increasing interest, judging from the tow to three-fold increase in NGO attendance over the two years since it was first introduced, indicating greater interaction than before. In addition to injecting environmental subject(s) in school curricula, the recent inclusion (by the Education Ministry) of environmental education in a newly established outdoor-oriented institute for trainers and educators near the capital, is another sign of better things to come.

THE NATIONAL COUNCIL FOR THE ENVIRONMENT

In order to rectify past deficiencies in the implementation of environment-related policies, and to ensure that all public agencies give due priority to the

maintenance of good environmental conditions, as well promote sustainable development and minimize environmental degradation, the Government will set up the National Council for the Environment (NCE), as indicated in Figure 1. The NCE will coordinate the policies as well as the functioning of all agencies, consider strategies and programmes which have implications on the environment and advise the Government on policies towards a more holistic approach to environmental management. It is envisaged (and hoped) that the NCE will be chaired by the Prime Minister himself, or at least the Chief Secretary to the Government, and that it would improve the current set-up, in contrast to the EQC which is only empowered to advise the Minister in charge of the environment.

EXTERNAL RELATIONS

Malaysia has played an important role bilaterally, regionally and internationally in the promotion of environmental cooperation. One active bilateral sphere of cooperation is the Malaysia-Singapore Joint Committee on the Environment (MSJCE), while region-wise, the establishment of the ASEAN Senior Officials on the Environment (ASOEN) in 1990, and its six working groups (on transboundary pollution, environmental economics (et al.) has gone a long way to resolving mutual issues, such as the adoption of a common stand for the United Nations Conference on Environment and Development (UNCED).

A number of international environmental issues have implications on the country, including Ozone-Layer Depletion and the dumping of toxic and hazardous wastes. In this connection, Malaysia, in accordance to the Montreal Protocol on Substances that Deplete the Ozone Layer, has agreed to a total phase-out of the controlled substances, including CFCs and Halon, by the year 2000. Concerned with the indiscriminate export and dumping of hazardous chemicals and wastes across borders by multinational companies (arising from the industrialised world), Malaysia will soon also ratify the Basel Convention on the Control of Transboundary Movements and the Disposal of Hazardous Wastes, 1989.

The country's delegation to UNCED in Rio, June 1992 played no small part in contributing towards the formulation of Agenda 21, especially in areas relating to, amongst others, forest, atmosphere, toxic and dangerous products, sewage-related issues and equitable representation of NGOs from developing countries. In Rio, the Convention for Biological Diversity was signed, and all indications are that the country will follow up with the signing of the Climate Convention. The latest development arising from the post-Rio deliberations is the appointment of Malaysia's Permanent Representative to the United Nation, Tan Sri Razali Ismail, who had played a leading role in UNCED, as the first Chairman of the Commission for Sustainable Development, a body

proposed at the Rio summit. This is an honour for Malaysia and with its global connotations should serve as a boost to environmental efforts at home.

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