

**LEGISLATIVE MEASURES IN PROTECTING THE ENVIRONMENT
FOR FUTURE PROJECT DEVELOPMENTS**

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LEGISLATIVE MEASURES IN PROTECTING THE ENVIRONMENT
FOR FUTURE PROJECT DEVELOPMENTS

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DEDICATION

To my beloved mother, husband and kids

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ABSTRACT

As we know that climate change was mother of all environmental problems. Current environmental issues in Malaysia are pollution problems beginning from traditional industries, water pollution problems, air pollution problems, waste problems and other environmental problems such as deforestation, soil erosion, species endangering, and a raft of other problems of the natural environment and ecosystem because of construction activities. This project report was prepared in an attempt to highlight research point for consideration by contractors and sub-contractors in the construction industry upon completion of construction projects. The aim of this study was to determine what the level of legislation in protecting the environment in Malaysia and the common issues relating to the environment in Malaysia. This study aimed to identify the opinion from related environmental practices whether the environmental legislation in Malaysia is sufficient to protect the earth and to determine the solution for improvement of environmental legislation in Malaysia. This topic was researched with concentration on Malaysian case laws and is supported with overseas case law related to the environmental legislation. Particular consideration and references are given to the journals and legislations. There are almost 3,500 result including journals, case laws, legislation and act was cited in Lexis Nexis Malaysia by using keywords: environment, legislation, emission, carbon emission, noise, oil pollution, air pollution, environmental legislation and legislative. However, there are only three (3) cases relates to this project report topic. This research concludes that the level of legislative measures in Malaysia is good compared to other countries.

ABSTRAK

Sebagaimana yang kita sedia maklum bahawa iklim yang berubah adalah faktor utama kepada semua masalah alam sekitar. Isu-isu persekitaran semasa di Malaysia adalah masalah pencemaran yang bermula dari industri tradisional, masalah pencemaran air, masalah pencemaran udara, masalah pembuangan sampah dan masalah-masalah alam sekitar yang lain seperti pembasmian hutan, hakisan, kepupusan, dan masalah lain yang berkaitan dengan ekosistem dan alam semula jadi disebabkan aktiviti pembinaan. Kajian ini dilakukan bertujuan untuk mengkaji bagaimana akta dan undang-undang memelihara alam sekitar dilakukan bagi tujuan kegunaan rujukan projek pembinaan di masa akan datang dan kaitan dengan kes undang-undang di Malaysia dan luar negara. Disertasi ini telah disediakan untuk rujukan dan penyelidikan oleh kontraktor dan sub-kontraktor dalam industri pembinaan bagi tujuan projek-projek pembinaan di masa akan datang. Kajian ini bertujuan untuk mengenalpasti apakah tahap undang-undang dalam melindungi alam sekitar di Malaysia dan isu-isu umum yang berkaitan alam sekitar di Malaysia. Topik ini telah dikaji dengan tumpuan kepada kes undang-undang di Malaysia dan disokong dengan kes undang-undang di luar negara. Rujukan dan pertimbangan tertentu dilakukan melalui jurnal-jurnal, akta undang-undang dan perundangan. Hampir 3,500 termasuk jurnal, kes undang-undang dan Akta telah dijumpai hasil carian di Lexis Nexis Malaysia dengan menggunakan kata kunci: alam sekitar, perundangan, pelepasan, pelepasan karbon, bising, pencemaran minyak, pencemaran udara, undang-undang alam sekitar dan perundangan. Walau bagaimanapun, hanya terdapat tiga (3) kes undang-undang yang berkaitan dengan topik penyelidikan projek ini. Kajian ini menyimpulkan bahawa tahap langkah-langkah perundangan di Malaysia adalah baik berbanding dengan negara-negara lain.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

In construction industry, environmental issues are becoming areas of concern. Construction activities are required to comply with all the Acts, Laws and Regulations related to the Environment.

As mentioned by Y.A.B Dato' Sri Najib Tun Razak in economic development and Malaysian effort to create an efficient, modern and low carbon economy. The Prime Minister pledged that Malaysia would reduce the intensity of its carbon emission by 40% by year 2020 during the Copenhagen Climate Summit in 2009. The first reason why our Prime Minister pledged to reduce emission because it is the responsibility of all countries whether large or small to take actions that will help prevent dangerous climate change. He said the climate change threatens us and all of us must act to reduce emissions and secure our children's future. To tackling carbon pollution and embracing the technology that allows us to do this and it is good for our economic growth and development the second

reason. In Malaysia, the energy efficiency project save money and investing in low carbon technologies creates opportunities and wealth. High paying jobs created in Malaysia by the solar power and LED lighting industries are an evidenced. Buildings usually account for more than 50% of energy consumption. Energy efficiency measures tend to offer very good value for money because the investments normally pays for themselves in just a few years.

There is no better example on benefits of embracing clean technology than the improvements that have been done to this building. Perdana Putra has achieved a Platinum rating in the Green Building Index as announce by Prime Minister. Perdana Putra is approximately one third more energy efficient than it was before. Perdana Putra had a Building Energy Intensity of 138 in 2010. It is one of the most energy efficient buildings in Malaysia and has been categorized as a High Performance Green Building. This project will become a catalyst for similar initiatives across Malaysia. The Prime Minister also hope that the entire city of Putrajaya transformed into a Smart, Green and Connected city that will showcase Malaysia's economic and technological advancement.

1.2 PROBLEM STATEMENT

As we know that climate change was mother of all environmental problems. Environmental terrorism these days has been inadvertently euphemized as climate change. Current environmental issues in Malaysia are pollution problems beginning from traditional industries, water pollution, air pollution, waste problems and other environmental problems such as soil erosion, deforestation and a raft of other problems of the ecosystem and natural environment because of construction activities.

Urban activities take up space and harm landscapes and ecological value. Environmental during construction especially transportation of materials increases air pollution, noise and dust pollutions which affecting the neighboring area. The construction industry give impacts to the environment such as energy wastage, waste disposals, greenhouse emission, soil contamination and etc. It is the responsibility of all countries whether large or small to take actions that will help prevent dangerous climate change. Laws are used as a form of management response to environmental problems in Malaysia. The increasingly complex environmental problems faced by Malaysia required a comprehensive piece of legislation which came in the form of the 1974 Environmental Quality Act. This project research is to determine the legislative measure in protecting the environment for future development.

1.3 Definition of Environmental Legislation

Environment is defined as the surroundings or conditions in which a person, animal or plant lives or operates. The environment is the natural world, as a whole or in particular geographical area, especially as affected by human activity. Environmental legislation is the collection of laws and regulations pertaining to air quality, water quality, the wilderness, endangered wildlife and other environmental factors. The umbrella of environmental legislation covers many laws and regulations, yet they all work together toward a common goal, which is regulating the interaction between man and the natural world to reduce threats to the environment and increase public health.

By 2032 development of the built environment is predicted to destroy natural habitats and wildlife on over 70% of the earth's surface, developing countries account for 23% of global construction activities. In Malaysia the population in 2010 increased to 28.3 million from 23.3 million in 2000, creating more demand for building and infrastructure development. Malaysia's development needs to be on a green path, in responding to the world agenda for sustainable development. Construction industry faces a challenging shift to a greener mode of operation involving low carbon growth, energy conservation and the use of green technology.

The green concept has become the centre of attention among construction stakeholders in Malaysia after the issue of environment protection was introduced in Malaysia in the 1960s. The construction industry must shift to a greener approach in order to address the problem of environmental degradation. The green approach focuses on low carbon growth, energy conservation and the use of green technology in Malaysia. This includes the construction industry.

A significant role in guiding the construction industry towards the sustainability agenda play by the Malaysian five year Development Plan, the NGTP, the National Energy Policy (NEP) and the National Policy on Climate Change (NPCC). To make a substantial contribution to tackling climate change issues, the NPCC drives every industry including construction. The NEP was launched to ensure the efficient utilization of energy and minimization of the environmental burden and adequacy of energy supply. Subsequent energy policies, such as the National Depletion Policy (NDP) and the Four-Fuel Diversification Policy (4FDP) were formulated in 1980 and 1981 respectively, in achieving these objectives.

To enhance the utilization of indigenous renewable energy resources to contribute towards national electricity supply security and sustainable socioeconomic development, The National Renewable Energy Policy and Action Plan (NREPAP) were launched in 2010. The NREPAP suggests the use of building-integrated renewable energy as a requirement in upgrading federal government buildings and the provision of special rewards to commercial and agriculture building owners that integrate renewable energy technologies into their new or refurbished buildings. Energy efficiency is implemented through demand side management and enforcement of the Energy Efficiency Regulations which include amendments to the Building By-Laws.

The Malaysian Government's commitment to environmental protection has also been expressed in its five year development plans. Aims of Malaysia to move towards a low carbon or green economy and ultimately achieve sustainable development. The Government has highlighted the efficient management of the environment, since the Sixth Malaysian Plan (6MP). The introduction of the National Green Technology Policy under the 9MP shows a greater focus on environmental problems. The most recent plan, the 10MP reflects the Government's commitment to sustainably managing the environment in order to reduce the emission of greenhouse gases and conserve existing resources. The Malaysian Construction Industry Master Plan is a ten year plan that charts several well thought out plans for the future direction towards sustainability in the construction

industry, with a specific focus on the construction industry. The CIMP has become a blueprint document for the Malaysian construction industry and it focuses on creating demand to improve performance in areas such as environmental sustainability.

1.4 Legislation

Legislation is define as the action of legislating, specifically the exercise of power and function of making rules (such as laws) that have force of authority by virtue of their promulgation by an official organ or state or other organization. It is the enactments or legislator or legislative body to help distressed of homeowners or a matter of business for or under consideration by a legislative body.

Laws are used as a form of management response to environmental problems in Malaysia. These laws are largely sectoral in character and focused on specific areas of activity. The increasingly complex environmental problems faced by Malaysia required a comprehensive piece of legislation which came in the form of the 1974 Environmental Quality Act. The Act came into force on 1 April 1974 for the abatement, enhancement of the environment and control of pollution. On 15 September 1975, the establishment of Division of Environment under Ministry of Local Government and Environment. It is follow with division of environment placed under Ministry of Science, Technology and Environment on 1 March 1976. On 1983 it is named as Department of Environment. On 27 March 2004, Department of Environment placed under the newly-formed Ministry of Natural Resources and Environment.

Environmental Quality Act (EQA) 1974 under Section 3 Environmental Protection Policy, Issuance of license, research etc. stated about enhancement of the environment. For prevention of pollution stated under Section 19 which is about prohibition against causing vehicles, ship or premises to become prescribed conveyance or prescribed premises. Section 34A stated about report on impact on environment resulting from prescribed activities. Abatement of pollution are stated under Section 30A power of use of substance and product and to state environmental labelling. Under Section 30B stated about power to specify rules on deposit and rebate schemes. Section 36A is about research cases and Section 47 stated about power of recovery of costs and expenses. To control pollution, EQA department must ensure that the construction company have licensing, acceptable conditions, prohibition and environmental audit.

In Malaysia CIDB has been create Malaysian Carbon Reduction and Environmental Sustainability Tool or MyCrest which is aims to assist, guide, quantify and reduce the built environment's impact in terms of reduced carbon emissions and environmental impact and taking into account a more holistic life-cycle view of the built environment. MyCrest also aims to integrate socio-economic considerations relating to the built environment and urban development.

MyCrest aims to integrate carbon assessment criteria and reduction strategies into the matrix of sustainability resulting in a combined sustainable assessment rating system for the built environment. It also to provide a quantifiable carbon assessment within a holistic sustainable rating system by integrating and extending the present criteria into life cycle-linked performances and parameters. Otherwise, MyCrest aims also to extend the present green building assessment into life-cycle impacts and its quantification. MyCrest also to combine both carbon emission and sustainable performance factors into a combined criterion linked to the design, construction, commissioning and operations of buildings. It also aims to be in line with the aims of Low Carbon City Framework (LCCF) by Ministry of Energy, Green technology and Water (KeTTHA).

In order to complement the effort in improving environmental aspects in construction industry, CIDB has identified and compiled a list of Acts and Regulations related to the construction activities. This compilation is tabulated in a “friendly format”, which serves as useful references for contractors in obtaining ISO 14001 EMS certification.

CIDB has identified and compiled a list of acts, regulations and rules related to the construction activities, in order to complement the effort in improving environmental aspects in construction industry. The legislations include (CIDB, 2008):

1. Environmental Quality Act 1974
 2. Street, Drainage and Building Act 1974
 3. Local Government Act 1976
 4. Environmental Quality (Clean Air) Regulations 1978
 5. Environmental Quality (Clean Air) Regulations 1978
 6. Environmental Quality (Sewage and Industrial Effluents) Regulations 1979
 7. Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987
 8. Environmental Quality (Control of Emission from Diesel Engines) Regulations 1996
 9. Environmental Quality (Control of Emission from Petrol Engines) Regulation 1996
 10. Pesticides (Highly Toxic Pesticides) Regulations 1996
 11. Earthwork By-Law 1996
 12. Environmental Quality (Water Pollution Control) Regulations 1998
 13. Environmental Quality (Declared Activities) (Opening Burning) Order 2003
 14. Environmental Quality (Scheduled Wastes) Regulations 2005
- The compilation of environmental concern by CIDB includes for air pollution, noise pollution, water pollution, soil pollution, impact on environment and tree preservation. For air pollution the related legislation was 1) Environmental Quality Act (EQA) 1974

which is for provision of open burning. 2) Environmental Quality (Clean Air) Regulations 1978 for burning of trade waste in incinerator only, asphalt concrete plant, portland cement plant, facilities discharging asbestos and free silica and erection of chimney. 3) Environmental Quality (Control of Emission from Diesel Engines) - Regulations 1996 as compile by CIDB stated about smoke emission control of motor vehicle in construction site, gaseous emission control from motor vehicle at construction site. Under Environmental Quality (Declared Activities) (Opening Burning) Order 2003 stated about declared activities which is subject to paragraph 4, the following activities are declared not to be open burning as defined for the purpose of Section 29A of the Act so long as such activity is carried out in accordance with the conditions specified.

As per CIDB compilation on Environmental Acts, Laws and Regulations related to construction industry for noise pollution was stated in EQA 1974 stated for restriction on noise pollution in construction site. In this act stated that “no person shall, unless licensed, emit or cause or permit to be emitted any noise greater in volume, intensity or quality in contravention of the acceptable condition specified”. In Local Government Act 1976 also stated about noise as nuisance in construction site.

For water pollution, CIDB was compile the acts, laws and regulation under description of legislation namely: restrictions on pollution of inland waters which stated that “no person shall, unless licensed, discharge or spill any oil mixture containing oil into Malaysian waters in contravention of acceptable condition specified,” prohibition of discharge of wastes into Malaysian water and prohibition against placing, deposit, etc. of schedule waste under EQA 1974.

There are several environmental concern in Environmental Quality (Sewage and Industrial Effluents) Regulations 1979 by CIDB for water pollution which are: 1) prohibition against new and altered sources of effluent discharge and acceptable conditions of discharge into inland water. Otherwise, in Pesticides (Highly Toxic Pesticides) Regulation 1996 stated about duties about person using or handling highly toxic pesticide under water pollution environmental concern. In Environmental Quality (Perbadanan Putrajaya) (Water Pollution Control) Regulations 1998 also stated about water pollution which is about new sources of discharge prohibition against new and altered sources of effluent discharge, acceptable conditions of discharge into inland waters prohibition against discharge of effluent containing certain substances and prohibition of discharge effluents. Transportation, storage or disposal of pesticides or pesticide containers also environmental concern under legislation of Pesticide (Pest Control Operator) Rules 2004.

For soil pollution, CIDB found under EQA 1974 stated in restrictions on pollution of the soil which mentioned about “no person shall, unless licensed, pollute or cause or permit to be polluted any soil or surface of any land in contravention of the acceptable conditions specified.” In Earthwork by-Law 1996 stated about siltation requirement for silt traps and sediment control facilities. The legislation for soil pollution also compile by CIDB under Street, Drainage & Building Act, 1974. It is environmental concern for dust in construction site which is to depositing of dirt on streets. In Environmental Quality (Perbadanan Putrajaya) (Water Pollution Control) Regulations 1998 stated about legislation of discharge onto land restrictions on the discharge of effluents and disposal of sludges prior to project commencement.

Impact on environment which is to be consider during construction was stated under Environmental Quality (Environmental Impact Assessment) Order 1987 for construction of airport. The act stated prior to project commencement of airport construction it must have of 2,500 metres airstrip or longer and airstrip development in state and national parks. Otherwise in same legislation, also stated for land reclamation prior to project

commencement, it is must coastal reclamation involving in area of 50 hectares or more same with housing development. Under Environmental Quality (Environmental Impact Assessment) Order 1987, prior the project commencement, also have legislation for infrastructure, ports, petroleum, power generation and transmission, quarries, transportation which is construction of Mass Rapid Transit projects, construction of resort and recreational development, waste treatment and disposal and water supply.

CIDB also compile for related legislation of scheduled waste. In Environmental Quality (Scheduled Wastes) Regulations 2005 stated about notification of the generation of scheduled wastes (SW) which is mentioned that “every waste generator shall, within 30 days from the date of generation of SW, notify the DG of the new categories and quantities of which are generated. Disposal of SW shall be disposed of at prescribed premises only.” Responsibility of waste generator, storage of SW, labelling of SW, waste generator shall keep an inventory of SW also stated in Environmental Quality (Scheduled Wastes) Regulations 2005. Act 172 Town & Country Planning 1976 have an act about tree preservation which is stated that “prohibited from cutting trees unless with written approval from the relevant authority prohibited from cutting trees from specified size, age, type or species which has existed at that location.”

1.5 Current scenario in Malaysia

In this research, we need to understand the problem before discussing the laws, for laws are there to solve the problem. For well understood reasons, we can be forgiven if what we do is considered human centric but occasionally we need to look up and acknowledge other species upon whom we depend for our survival.

In Malaysia there's environmental problems which are at Gembing Kuantan about Lynas and Radioactive Waste Disposal, at Bukit Koman which is issue of cyanide poisoning, at Pengiran, Johor about Petrol Chemical Complex and burning of fossils fuels and at Ulu Muda Forests which is about Logging and Deforestation.

Other environmental problems was problem of gazetted forest reserves to stay forested at Trantum Forest Reserve, Pahang, preventing further development at the fringes of the green lung at Bukit Kiara, Pondok Tanjung Forest Reserve On brink of Destruction which are 10,170 hectares gazetted in 1913, shrunk to 4446 hectares.

Basically there is no lack of Environmental Laws in Malaysia. There is green issues related to deforestation, illegal logging, biodiversity and illegal wildlife trade. Otherwise for blue issues includes ocean destruction, illegal fishing, marine pollution, freshwater pollution and flooding. The issue related to the brown issues was urbanization, land and air pollution.

As we know that climate change was mother of all environmental problems. Environmental terrorism these days has been inadvertently euphemized as climate change.

There is no escape hatch if we touch the runaway greenhouse effect. The real risk of turning Planet Earth to 14 degree Celcius into some sort of Venus which is 462 degree Celcius if we continue business as usual. Assume the amount of carbon dioxide in the air is instantly doubled. How much will global temperature rise? Humans are burning fossil fuels so rapidly that a doubling of CO₂ could be expected in less than a century. The renowned authority on Climate Change, Dr. James Hansen puts an increase of half degree Celcius as equivalent to 0.6 watts per square metre, a form of energy imbalance 400,000 Hiroshima atomic bombs per day. Malaysian Prime Minister pledged at Copenhagen Summit to reduce carbon emission by 40% compared to its 2005 level.

1.5.1 Lack of Energy Efficiency Legislation Contributing to National GHG Emissions Growth

The Malaysian building sector and construction industry is yet to streamline and upgrade its conventional approach to innovative building systems and energy efficiency. For example, the Construction Industry Development Board (CIDB) missed an opportunity to promote energy efficiency in the Construction Industry Master Plan (2006-2015), which was launched in 2007. Poor quality of construction, maintenance and performance of contractors remain the central challenges affecting the industry. Most environmental problems in Malaysia are caused by “lack of environmental considerations in the exploitation, development and management of resources as well as lack of control of pollution resources”. Malaysia presently has no energy efficiency strategies enforceable in the mandatory Uniform Building By-Laws (UBBL) to provide minimum energy efficiency and/or energy performance standards for buildings. In addition, sectoral baseline data for energy-related GHG emissions in Malaysia is limited or at best underdeveloped. Presently, there is no consistent framework in Malaysia for assessing GHG emissions from buildings, which limits the development of an emissions baseline for the building sector and therefore building energy performance policies. This is reflected in the existing Malaysian Green Building Index (GBI) rating tool, which exclude any calculation for GHG emissions from buildings.

In reference to energy efficiency (EE) for the building sector in Malaysia, the Malaysian voluntary Standard Code of Practice on Energy Efficiency and Use of Renewable Energy for Nonresidential Buildings (MS 1525:2007) was introduced in 2005 (and updated in 2007). Energy efficiency for residential buildings in Malaysia is neither regulated nor promoted, which is likely to have significant implications for its energy end-use performance. Without such legislation to reduce the sector's energy consumption, its GHG emissions growth is inevitable and puts the country at high risk for carbon lock-in with more inefficient buildings being constructed. Energy efficiency performance standards would help reduce total GHG emissions from electricity consumed by the building sector.

It is also crucial for stakeholders in the building industry to promote existing guidelines to reduce its overall environmental impact. Additionally, the industry must be able to change and expand innovatively, in order to meet shifting demands and growing international standards. This voluntary code of practice is to guide effective use of energy (including renewable energy) in new and existing non-residential buildings, to reduce energy consumption within the construction, operation and maintenance of a building. At present, a similar energy efficiency guideline for the residential sector does not exist. Therefore neither the mandatory or voluntary standards consider the impact of building energy use on climate change.

According to United Nations Development Programme (UNDP) report on Malaysia's Building Sector Energy Efficiency Project (BSEEP), in 2008, Malaysia's building sector consumed approximately 7,750 GWh of electricity and emitted 5,301 ktoe of GHG. By 2009, the sector's energy consumption increased to 8,315 GWh and its GHG emissions to 5,688 ktoe. The increase between 2008 and 2009 was higher than expected, at a rate of approximately 7.3% for both the sector's energy consumption and GHG emissions. The forecast predicts an increase of GHG emissions to 8,088 ktms and energy consumption to 11,824 GWh by 2014.

1.5.2 The construction industry in the Malaysian economy and environment

In every country the construction industry is an important economic sector, providing physical facilities and infrastructure. Construction also has a strong indirect influence on other industries through the pattern of demand and supply. In Europe and the US, construction is the largest industrial sector which is representing 10– 11% and 13% of GDP. Malaysia described as an upper-middle-income economy, and on track to achieve a high-income economy status by 2020. This significant growth has created a great demand for physical developments to provide infrastructure for business and social purposes such as housing, education, retail and manufacturing. According to the Australian Business Council for Sustainable Energy 2007, Malaysia is one of the fastest emergent construction industries in the world. This expansion pattern is associated with the world's environmental degradation problem. Malaysia as a developing country, is also suffering from deforestation with major causes attributed to large-scale land development including construction activities. Throughout the construction phases, built environment contribute significantly to global environmental problems. It will create more pressure on the environmental situation in Malaysia, if continuing to deliver construction projects in the current way. The identified environmental problems include indoor and outdoor environmental pollution, inefficient waste management, inefficient energy usage and depletion of natural resources. As found by Pitt et al, the built environment in the UK was responsible for 50% of the country's total energy consumption. Building development accounted for 39% of the total energy usage in 2005 in the US. The building sector consumed nearly 8000 GW h of energy in 2008 in Malaysia. The construction industry in Malaysia also accounts for one-third of global CO₂ emissions due to non-renewable energy usage. Asia's projected carbon emission contribution will significantly increase the world's total CO₂ emission, according to Kameyama and Sari. Green construction seeks to counter these influences. Green construction is an approach taken by the building industry to achieve sustainable development and aims to reduce the overall impact on the natural environment by lowering the levels of pollutants, reducing greenhouse emissions, conserving resources through reuse and renewal strategies and reducing waste throughout

all the stages of building construction. Similarly, a green building “as the end product must be able to reduce the overall impact on the natural environment by reducing greenhouse emissions, conserving resources through reuse and renewal strategies and reducing waste”, according to Kibert.

1.6 Current Environmental Issues In Malaysia

1.6.1 Pollution Problems Beginning from Traditional Industries

Environmental pollution problems in Malaysia have a long history. River pollution by mine wastewater and sludge began with the rapid development of tin mining, a traditional industry that started at the turn of the century about 100 years ago. In later years, other traditional industries such as natural rubber and palm oil production began in earnest, and wastewater from the factories caused further pollution of rivers and seas. From the late 1960s, Malaysia pursued rapid industrialization supported by foreign investment, but the result of industrialization was a raft of pollution problems, caused by industrial wastewater and other wastes, which became very apparent from the 1970s. In recent years, air pollution caused by the tremendous increase in road traffic that has accompanied economic development, and water pollution from household wastewater, have become obvious problems that particularly affect urban areas. Another recent problem is haze (smoke and fog caused by particulate matter), which occurred on a large scale for several months in 1997 and caused respiratory complaints and other health problems in the community. In this incident, the haze was caused by the huge forest fires on Kalimantan Island and in other parts of Indonesia, across the sea from Malaysia. It is therefore a unique environmental problem that will not be easy to solve. Other problems noted in Malaysia are oil pollution of the sea and deforestation due to regional development of various kinds.

Although Malaysia has a host of environmental problems that demand solution, including those associated with scheduled wastes, the government is implementing more effective pollution controls than other Southeast Asian nations. It is also committing resources to construction of environmental infrastructures, such as sewerage systems to deal with household wastewater. Given these positive moves, environmental problems in Malaysia do not appear to be as grave as in the Philippines, Indonesia and Thailand which were covered in our previous surveys.

1.6.2 Water Pollution Problems

Water pollution is arguably the most fundamental environmental issue in Malaysia, since the country's pollution problems began with water pollution caused by the three traditional industries of tin mining, natural rubber, and palm oil, as mentioned above. The government's environmental programs therefore give high priority to control of water pollution.

Rivers in Malaysia generally appear to have high organic pollution loads and high SS concentrations. However, because water pollution status is published as an index (WQI), we were unable to obtain accurate information about concentrations of river pollutants over recent years for this research. Nor could we get a precise picture of the severity of river pollution in Malaysia.

In moves to solve these water pollution problems, Malaysia is putting sewerage services in place to deal with household wastewater which is a leading source of pollution. Unlike sewerage systems in Japan, the projected wastewater treatment systems will handle household wastewater only. In 1993, Malaysia passed the Sewerage Service Act, paving the way for privatizing the sewerage systems. The task of privatization was undertaken by Indah Water Konsortium Sdn. Bhd., which aims to deliver services to 79 percent of the population within the year 2000. In 1996 the Malaysia government began monitoring

groundwater in the Malay Peninsula with the aim of preventing possible contamination. No contamination has been detected to date.

1.6.3 Air Pollution Problems

Air pollution in Malaysia falls into three main categories: air pollution due to exhaust gas from mobile emission sources such as motor vehicles, principally in urban areas; haze caused by the weather and by forest fires in neighboring Indonesia; and pollution caused by industrial activities.

Another problem is black smoke from diesel motor vehicles, the subject of numerous complaints from the public. In response, the government has launched a campaign to crack down on vehicles that violate the regulations. In regard to lead pollution, the government in 1991 introduced incentives to use unleaded gasoline, and since 1996 it has been obligatory for gasoline-fueled vehicles to have catalytic converters. These policies have been successful in reducing the level of lead in the atmosphere year by year.

Haze is another major problem in Malaysia. There were minor haze incidents in 1993 and 1994, years that recorded low rainfall, but haze on an unprecedented scale occurred from the summer of 1997 due to the huge forest fires that blazed in Sumatra and Kalimantan in Indonesia. The haze that year continued for five months, from mid-July to November. In late September, when the haze was most severe, air pollution readings in Sarawak exceeded the "hazardous" level of 500 on the Air Pollutant Index (API). As well as affecting health and causing an increase in respiratory complaints, the 1997 haze incident had major economic costs, impacting on transportation services, tourism, and the fishing industry among others. The disaster prompted the government to subsequently ban all open burning within Malaysia.

Air pollution caused by industrial activities is still low in Malaysia. Including both industrial fuels and industrial processes, the industrial sector contributes only 7 to 8 percent of total air pollution in the country. Except for special industries such as quarry and rubber production, industrial activities are not a major factor.

1.6.4 Waste Problems

Industrial waste is the greatest environmental dilemma affecting Japanese companies and all those conducting industrial activities in Malaysia. Until 1997 Malaysia still had no approved final disposal facilities, as prescribed in the legislation, for dealing with the scheduled wastes defined in the set of regulations and orders enacted in 1989. For nearly a decade, Japanese companies had to go to great lengths, storing scheduled wastes on-site, for example, if they wanted to deal with their wastes in compliance with the law.

Scheduled wastes are given high priority in Malaysia's environmental programs and penalties for illegal dumping are quite strictly enforced. There are frequent court cases about illegal dumping, and the waste disposal issue will likely be a headache in future years for Japanese companies and for other foreign companies operating in Malaysia.

Local authorities used to be responsible for collecting, treating, and disposing of municipal wastes, but in recent years there have been concerted moves to transfer the operation to privatized companies in which the state government and private sector both have a stake. The country has been divided into four regions, each with a private waste management operator already established. Municipal wastes are disposed of by landfill without any intermediate treatment, and most of the landfill is carried out by open dumping. Specialist private operations have been set up to handle medical waste and other special wastes.

1.6.5 Other Environmental Problem

The various forms of development in Malaysia have resulted in deforestation, soil erosion, species endangering, and a raft of other problems of the natural environment and ecosystem. In relation to industrial activities, however, noise can be cited as a particular problem. Malaysia currently has regulations governing motor vehicle noise, but there are no specific regulations about general factory noise other than in the work environment. However, the Environment Quality Act 1974 has a section on noise controls, and the government is drafting further regulations. Monitoring of noise levels in the vicinity of factories and construction sites has also begun, following complaints from local residents.

Malaysia is also taking steps toward eliminating specific chlorofluorocarbons in order to protect the ozone layer. A unit of Montreal Protocol for protection of the ozone layer was set up in the Department of Environment (DOE) in January 1997, and a project for phasing out ozone depleting substances, supported by a grant from the Multilateral Fund of the Montreal Protocol, is now underway with the participation of several dozen companies. In addition, the problem of global warming comes under the jurisdiction of the Malaysia Meteorological Service, rather than the DOE. Approaches to this problem from the perspective of energy policies come under the Ministry of Energy, Communications and Multimedia, which is promoting the use of natural gas as an energy source.

1.7 RESEARCH OBJECTIVE

The objectives of this research are as follow:

- a) This research is an exploratory research which is to determine what the level of legislation in protecting the environment in Malaysia and the common issues relating to the environment in Malaysia.

1.8 RESEARCH METHODOLOGY

The methodologies adopted in this research are qualitative and doctrinal; the research is conducted by making reference to the journals, case law and legislation. The research's major references are derived from Malayan Law Journal (MLJ), case laws from LexisNexis Malaysia and Malaysian legislation. Overseas laws also used to support of the findings and discussions, although legal references are provided mostly for elaboration purposes.

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