ENVIRONMENTAL QUALITY REPORT

1992

Department of Environment
Ministry of Science, Technology and the Environment
Malaysia

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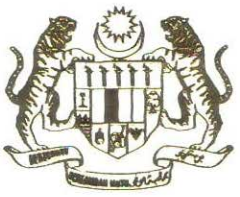

Department of Environment
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30 September 1993

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FOREWORD

In compliance with Section 3 (1)(i) of the Environmental Quality Act (EQA), 1974 and in fulfilment of a principal duty of the Director-General of Environmental Quality, Malaysia, the 1992 Environmental Quality Report (EQR) is hereby published.

This time around the EQR has undergone a substantial change not only in terms of thickness, but also in its layout and general appearance. Bearing in mind that the format of the EQR has not varied greatly since its earliest publication in the seventies, and as a result of feedback received through the years, it was deemed timely to respond to contemporary needs of different sectors serviced by this Report. Two versions are now introduced, one to offer the salient points of the country's environmental quality as reported by the Department of Environment (DOE), the other to contain supplementary data in the form of detailed charts, graphs and other paraphernalia sought by those interested in such information.

The publication hereby presented is the former, a somewhat less voluminous but hopefully more concise version, produced in recycled paper. Barring any obstacle, the latter version will be published by December 31, 1993. This being the first attempt at revising the EQR, I would gladly welcome comments and constructive feedback in an effort to improve the Department's publications within the spirit of innovativeness and quality rather than quantity.

It is with pleasure, therefore that I hereby present this new (and hopefully improved) Environmental Quality Report 1992 for the consideration and perusal of all concerned with the well being of the Environment.

(**DATO' DR ABU BAKAR JAAFAR**, *DPMP, JSM, KMN*)

Director-General of Environmental Quality,
Malaysia

30 *September 1993*

GLOSSARY OF ABBREVIATIONS

ACPMS	ASEAN Cooperative Programme on Marine Science
ASEAN	Association of South East Asian Nations
ASOEN	ASEAN Senior Officials on the Environment
BIM	Balai Ikhtisas Malaysia
BOD	Biochemical Oxygen Demand
BCSD	Business Council for Sustainable Development
CFC	Chlorofluorocarbon(s)
COD	Chemical Oxygen Demand
CP	Country Programme
CPO	Crude Palm Oil
dB	decibel(s)
DG	Director-General
DNA	Designated National Authority
DOE	Department of Environment
E.coli	*Escherichia coli*
EIA	Environmental Impact Assessment
EIP	Environmental Improvement Project
EPU	Economic Planning Unit
EQA	Environmental Quality Act
EQC	Environmental Quality Council
EQR	Environmental Quality Report
EPSM	Environmental Protection Society of Malaysia
ERS	European Remote Sensing
ESCAP	Educational & Scientific Commission for Asia & Pacific
EXCO	Executive Council
EXCOM	Executive Committee
FCCC	Framework Convention on Climate Change
FMM	Federation of Malaysian Manufacturers
GEF	Global Environmental Facility
GIS	Geographic Information System
HSU	Hartridge Smoke Unit(s)
INFOTERRA	International Referral System for Sources of Environmental Information
INC	Inter-Governmental Committee
IMF	Interim Multilateral Funding
IPCC	Inter-Governmental Panel on Climate Change
IPCS	International Programme for Chemical Safety
IRPTC	International Register for Potentially Toxic Chemicals
JICA	Japan International Cooperation Agency
JSWPR	Japan Society for Water Pollution Research
LADA	Langkawi Development Authority
MITI	Ministry of International Trade and Industry
MOA	Ministry of Agriculture
MOH	Ministry of Health
MOHR	Ministry of Human Resources
MOPGC	Malaysian Oil Palm Growers' Council
MOSTE	Ministry of Science, Technology and the Environment
MOT	Ministry of Transport
MRPC	Malaysian Rubber Producers Council
MSJCE	Malaysia-Singapore Joint Committee on Environment
NFP	National Focal Point
NGO	Non-Government Organisation
NH_3N	Ammoniacal Nitrogen
ODS	Ozone-Depleting Substance(s)
PIC	Prior Informed Consent
PM	Particulate Matter
RM	Ringgit Malaysia
RNR	Raw Natural Rubber
SS	Suspended Solids
SMCED	Second Ministerial Conference on Environment & Development
SOP	Standard Operating Procedure
UKM	Universiti Kebangsaan Malaysia
UN	United Nations
UNCED	UN Conference on Environment & Development
UNDP	UN Development Programme
UNEP	UN Environment Programme
WQI	Water Quality Index

1992 - YEAR IN REVIEW

1992 - Year in Review

Environmental quality monitoring programmes of the DOE continued to supplement its enforcement work, and to uphold the Environmental Quality Act (EQA), 1974 and Regulations thereunder. The haze did not recur as it did in 1991, but high particulate concentration continued to prevail in, not unexpectedly, urban centres. The assessment of river water quality has revealed a slight increase in the number of very polluted rivers; and that more rivers are drawn from the 'clean' to the 'slightly polluted' category; while heavy metals are showing up in the waterways of industrial areas including those in Johor and Seberang Prai. Correspondingly the coastal fringes of these same areas, being the downstream receivers, register high heavy metals concentration, although even more evident than any other parameter are oil and grease, suspended solids and *E.coli* which remain prevalent contaminants of our coastal waters.

An Airborne Surveillence Programme took off with cooperation from the Royal Malaysian Police Air Wing, enhancing the monitoring of environmental offences from open burning to deliberate discharging of effluents. A collision at sea involving the tanker 'Nagasaki Spirit' which dominated media coverage over the region in September, truly tested the capabilities of the National Contingency Plan and the Standard Operating Procedure between Indonesia, Malaysia and Singapore to combat oil spills in the Straits of Melaka and Singapore while the newly formed Geographical Information System (GIS) Unit increased its input-to-development planning capacity with the acquisition of sophisticated GIS equipment. The Environmental Law Review exercise which began in 1991 culminated in the Committee's Final Draft Report at year's end, while Environmental Impact Assessment (EIA) and the proposed integrated facility for toxic and hazardous wastes sustained media and political interest throughout the year. On the need to improve and strengthen the EIA Procedure, the Government of Malaysia upon the recommendations of MAMPU and the Panel for the Modernisation of Public Administration chaired by the Chief Secretary to the Government had issued nine major directives, and in response, the DOE has managed to reduce the average time of EIA approval from 6.2 months in 1991 to 3.6 months in 1992.

The year 1992 is best remembered for its Earth Summit, at Rio de Janeiro in June, the reputedly largest ever gathering of heads of State with one purpose. Malaysia's high profile at the United Nations Conference on Environment and Development (UNCED) left an indelible mark; thanks to the able leadership of our Permanent Representative to the United Nations, Tan Sri Datuk Razali Ismail, who deservedly went on to receive the year's Langkawi Award.

Cooperation on environment in the domestic and international arenas proceeded full speed both in the build up to and after UNCED. ASOEN progressed through the regular meets of the six working groups, and bilateral relations with at least ten countries ranging from the developing (including Mauritius and Vietnam) to the developed countries namely, Canada, Denmark and Germany, experienced an upsurge in activity as goodwill missions traversed in both directions. The pre-UNCED Second Ministerial Conference on Environment and Development and the National Seminar on the Follow-Up to UNCED, held in Kuala Lumpur, April and September, respectively, received immense support, again, largely from the developing world. 1992 also saw Malaysia's signing of the Biological Diversity Convention in Rio, vigorous negotiations throughout the year with the Interim Multilateral Fund (IMF) proposed for the Montreal Protocol implementation of the Phase-out of Ozone-Depleting Substances (ODS), and preparations for a probable signing of the Climate Convention.

ENVIRONMENTAL QUALITY COUNCIL

Introduction

The Environmental Quality Council (EQC), established under Section 4(1) of the Environmental Quality Act, 1974, was launched on April 12, 1977, acting as a body to advise the Minister on matters pertaining to the Act and on any matter referred to it by the Minister. In addition, the Council has also provided guidance to the DOE in the formulation of policies and strategies related to environmental protection and management, including the setting of standards and regulations to be adopted by the country. By virtue of the broad representation in the EQC (as shown in the next page) it follows that standards and regulations subsequently adopted would have been screened thoroughly, taking into account the interests of all sectors represented, and therefore adopted by general concensus.

In 1992, the activities of the Council focussed on management of resources and environmental planning and a more effective approach to prevent further degradation of the environment. The EQC also undertook to review the procedure and requirements of the EIA in Malaysia, bring out the issues arising from its enforcement since 1988 and recommend practical lines of action that are required for its effective implementation. A Subcommittee was formed by the Council in an effort to iron out operational and legal problems in EIA implementation.

Activities

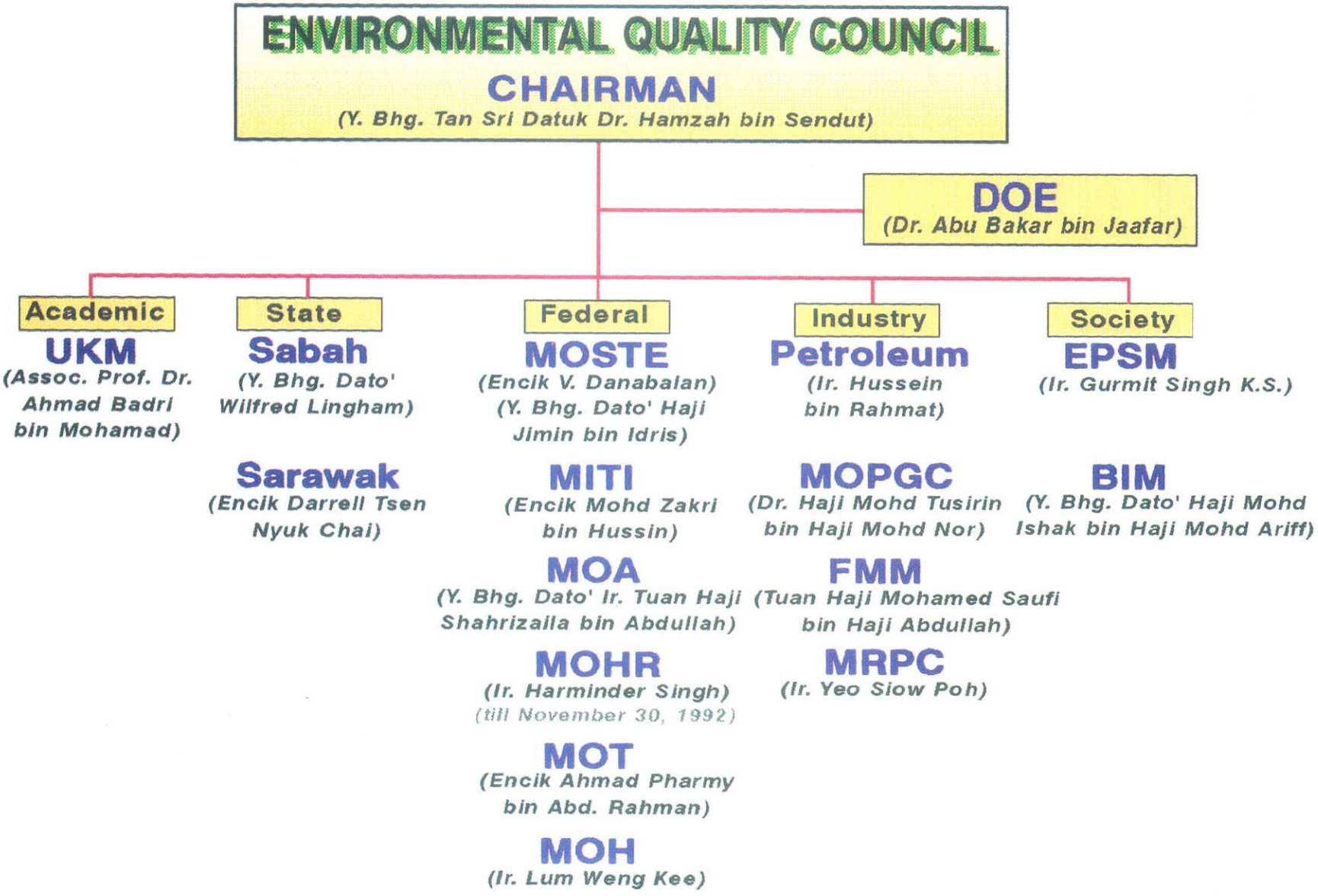
The Council met on four occasions during the year on February 24, May 15, September 14 and December 1, 1992, the last commemorating the Golden Jubilee or 50th meeting of the EQC. Much information was sought for clarification from the DOE and many issues were put on the agenda for discussion so as to reflect the Council's broad representation of people and industry in environmental care, status of EIA implementation and the operational and legal problems of EIA in Malaysia.

The Council's Report on EIA had concluded that as the nation enhanced its industrialization effort in line with Vision 2020 costly mistakes on the environment could be expected and it is, therefore, imperative that such mistakes be prevented at source by the effective use of the EIA procedure. Thirty three proposals were forwarded, the thrust of which was to shorten processing time and increase efficiency.

During the course of the year the Council's meetings outside of Kuala Lumpur had involved representatives of the host/state government. In Penang the EXCO Member responsible for Environment and the State Economic Planning Unit Director were in attendance, while in Langkawi the Director of Town and Country Planning presented the Structure Plan of Pulau Langkawi, which was devised under the Town and Country Planning Act, 1976 in collaboration with the Langkawi Development Authority (LADA).

Other than the issues highlighted which formed in the main, EIA-related matters, the working papers submitted to the Council meeting in 1992 also touched on environmental auditing, as well as manufacturing and sustainable development.

The EQC had met 50 times since 1977 and in all had considered 116 working papers.


ENVIRONMENTAL QUALITY COUNCIL
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(Ir. Harminder Singh)
(till November 30, 1992)
MOT
(Encik Ahmad Pharmy bin Abd. Rahman)
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EPSM
(Ir. Gurmit Singh K.S.)
BIM
(Y. Bhg. Dato' Haji Mohd Ishak bin Haji Mohd Ariff)

STATE OF THE ENVIRONMENT

AIR QUALITY

In 1992, the measurements of total suspended particulates (TSP), atmospheric lead, heavy metals and dust fallout were continued at 217 monitoring stations under the Annual Air Quality Monitoring Programme. The respirable particles were measured at seven (7) monitoring stations, mainly at residential areas. The total number of samples collected for TSP was 2,052, while those of dust fallout was 1,869. The percentage of achievement for the monitoring of air quality in terms of TSP and dust fallout was 82 and 92 per cent respectively.

The quality of air is still very much influenced by the degree of urbanisation, concentrating particulates, either total suspended or respirable, in the cities within the industrial corridor from Pulau Pinang to Johor Bahru as shown in Figure 1. The sudden increase in the concentration of PM10 in Johor Bahru and Kuching in the months of June and August, respectively, was due to extensive earthwork activities in the surrounding areas, for the development of housing projects. The hub of the west coast corridor namely, the Klang Valley, recorded relatively higher atmospheric lead although its annual average had declined from 1989, the latter partly due to reduction of lead in petrol from 0.40g/litre to 0.15g/litre since January 1, 1990 and partly due to the introduction of unleaded gas (ULG) in the market. This is shown in Figure 2. Gaseous pollutants such as carbon monoxide, oxides of nitrogen and sulphur dioxide still remained at safe levels, notwithstanding the current rate of increase in motor vehicles, which certainly warrants caution in the future. The year 1992 stayed relatively haze-free due in part to favourable weather, as well as the controlled burning of forests and agriculture in the region, particularly in Kalimantan and Sumatera. The latter was achieved largely through cooperation of the members of the ASEAN Working Group on Transboundary Pollution, strict prohibition of open burning and airborne surveillance between the DOE and the Royal Malaysian Police, since the October 1991 haze incident.

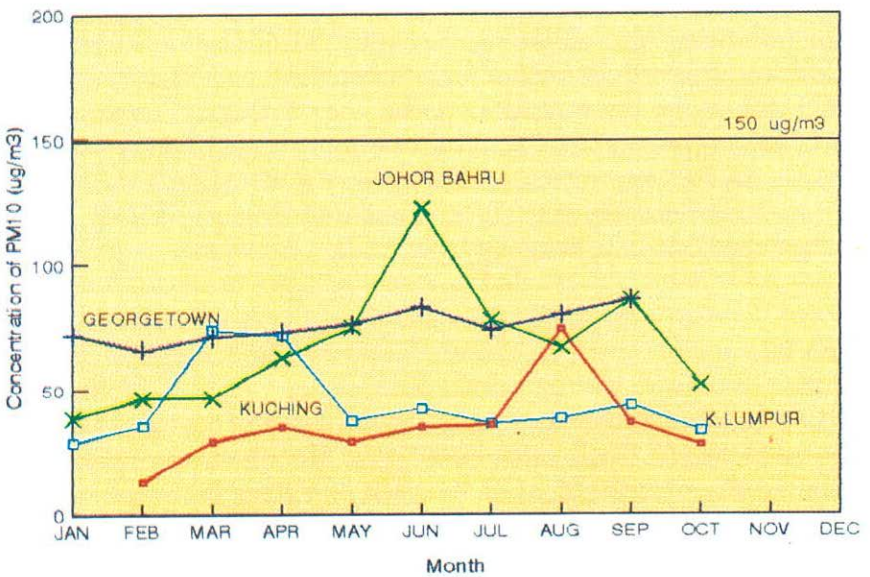


Figure 1. Malaysia: Concentration of PM10, 1992

Note:
Recommended Malaysian Guideline for PM10 is 150 ug/m3 (daily average)

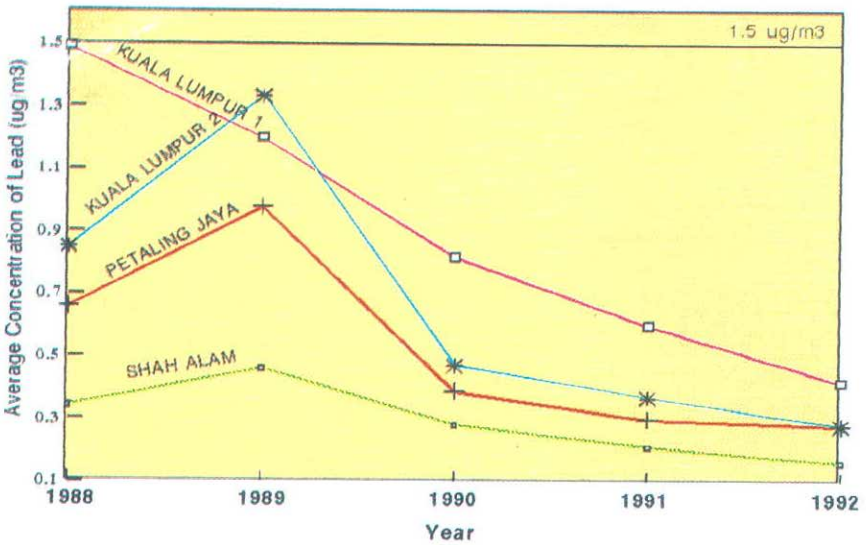


Figure 2. Kuala Lumpur & Selangor: Annual Average Concentration of Lead, 1988-1992

Note:
Recommended Malaysian Guideline for Lead is 1.5 ug/m3 (3-month averages)

Air Quality Management Study For Klang Valley Region

To improve the air quality in the Klang Valley, a study on air quality management in the Klang Valley region began in January 1992 with the assistance of a JICA Study Team, under the Technical Cooperation with the Japanese Government. This study is expected to be completed in June 1993. The objectives of the study is to come out with an implementable guideline for air pollution control in the Klang Valley region with special emphasis on improving air monitoring capability, identification of major pollutant sources, prediction of air pollution in future and alternative control measures. At the same time, through this study, the transfer of technology to Malaysian counterparts and formulation of training programmes would also be implemented. Malaysian counterparts involved in the study were representatives from DOE, Malaysian Meteorological Services, Tenaga Nasional Berhad, Local Authorities in Klang Valley Region, local Universities and the Economic Planning Unit.

NOISE LEVEL

Monitoring of noise through the year concentrated on areas of heavy traffic and revealed low average noise levels, in the range of 64.9 to 78.8 dB(A), in most major towns. Compared to the Japanese Standard of 75 dB(A) for Area II (mixed residential and commercial area), Figure 3 shows that Klang, Port Klang, Kuala Lumpur, Ipoh, Johor Bahru and Kota Kinabalu rank among the noisier centres on average, whilst maximum readings were recorded in Johor Bahru. Readings in Langkawi Island, a major tourist destination, were the minimum.

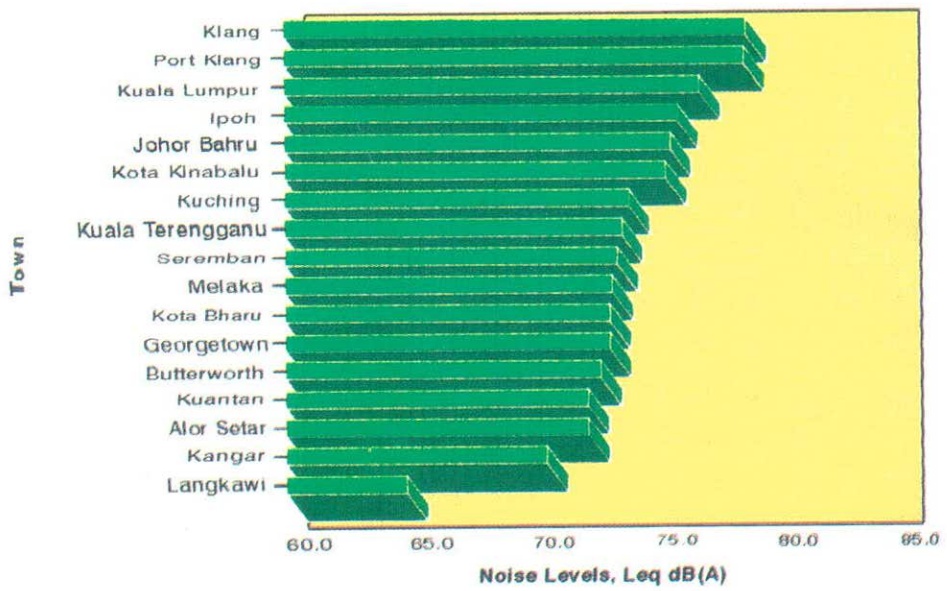


Figure 3. Malaysia: Traffic Noise Levels in Selected Urban Areas, 1992

RIVER WATER QUALITY

In 1992, 87 rivers were again monitored and a total of 3,559 samples collected. Appraisal of the water quality based on the Water Quality Index (WQI) for five parameters namely, Biochemical Oxygen Demand (BOD_5), Chemical Oxygen Demand (COD), Ammoniacal Nitrogen (NH_3N), Suspended Solids (SS) and pH showed that the river water quality has deteriorated at a rate of 1.17 per cent. The number of very polluted rivers had increased from 6 (7%) in 1991 to 7 (8%) in 1992, while rivers slightly polluted had increased from 44 (51%) in 1991 to 55 (63%) in 1992. Correspondingly, the number of clean rivers had decreased from 37 (43%) to 25 (29%) as shown in Figure 4. The six very polluted rivers were: Sungai Air Baloi (Johor), Sungai Juru and Sungai Jejawi (Pulau Pinang), Sungai Sepang and Sungai Buloh (Selangor), Sungai Kelang (Federal Territory/Selangor) and Sungai Ibai (Terengganu).

The water quality assessment gave emphasis to three important parameters namely, NH_3N, BOD_5 and SS, due to the relative significance of each to the type of pollution. Among these three parameters, deterioration in terms of NH_3N was highest at a rate of 2.17 per cent, followed by SS at a rate of 0.88 per cent, and BOD_5 the lowest at a rate of 0.10 per cent. This analysis indicates that organic loadings (especially from sewage and animal wastes) and silt (from soil erosion) were still the major contributors to our river pollution. Heavy metals were monitored only at selected rivers, and it was found that mercury, lead and zinc continued to exceed the standards in certain rivers. Out of 50 rivers monitored for mercury, 9 rivers recorded high percentages of samples exceeding the standard value of 0.004 mg/l, with Sungai Prai (Pulau Pinang) recording the highest value of 0.0757 mg/l. Lead was found the most in Johor with 12 rivers exceeding the standard value of 0.02 mg/l, and the highest level of 0.376 mg/l was found in Sungai Sayong (Johor). Industrial activities were found to be the major source of heavy metal pollution in the rivers.

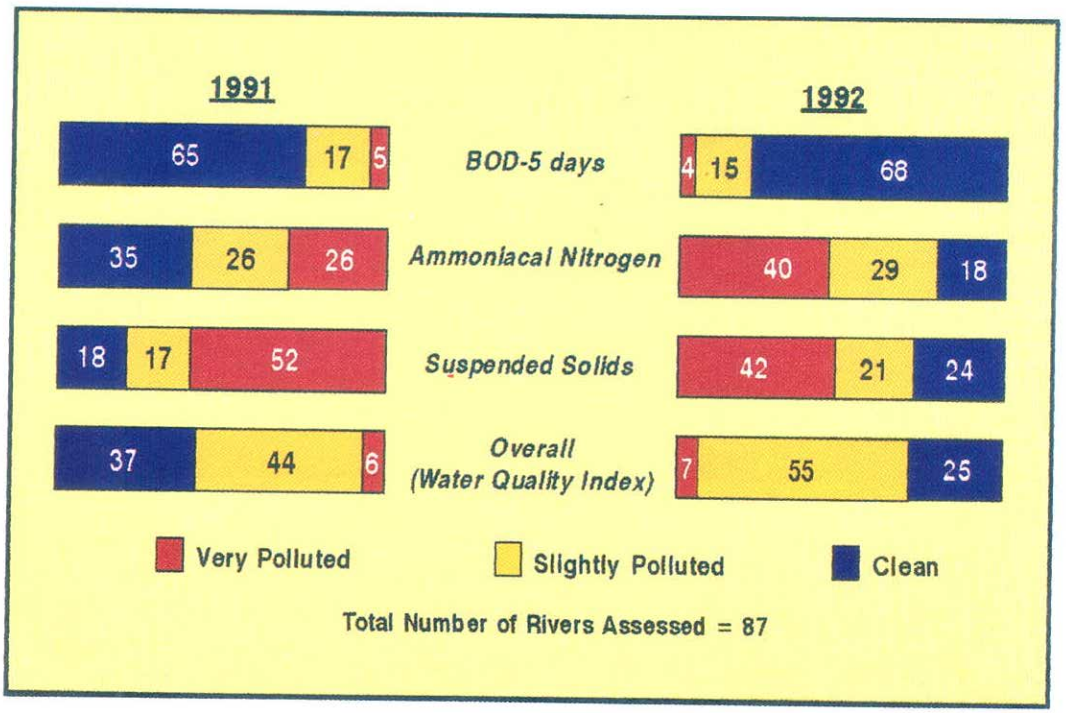


Figure 4. Malaysia: River Water Quality Status, 1991-1992

MARINE ENVIRONMENTAL QUALITY

Oil and grease, suspended solids and *Escherichia coli (E.coli)* prevailed as main contaminants of the coastal environment, being the end results of accumulated land discharges from all manner of development activities as shown in Figure 5. Areas most affected by oil and grease were Negri Sembilan, Melaka and Selangor on the west coast of Peninsular Malaysia, Kelantan and Terengganu on the north-eastern coast, and both Sabah and Sarawak across the South China Sea. *E. coli* readings were highest off Pulau Pinang, Negri Sembilan, Melaka and Johor while the distribution of total suspended solids was evident on either side of the Peninsular namely, off Perak and Pulau Pinang in the west and Pahang, Terengganu and Kelantan in the east.

Beach tar sampling was carried out at selected, in particular tourist and recreational sites; and most affected on a consistent basis were the coasts of Perak, Selangor and Johor. This activity was also mobilised extensively on the Island of Langkawi following a tanker collision which impinged on its surrounding waters in the month of September.

Heavy metal measurements showed that Johor and Pulau Pinang recorded highest incidence of mercury in their coastal waters, while significant levels of lead were found along the Perak and Sabah coastline, the latter also recording high cadmium content. This heavy metal pollution is largely due to industrial activities. All other metals registered fairly low levels except for arsenic along the Johor coast, a relatively new development which warrants greater scrutiny hereon.

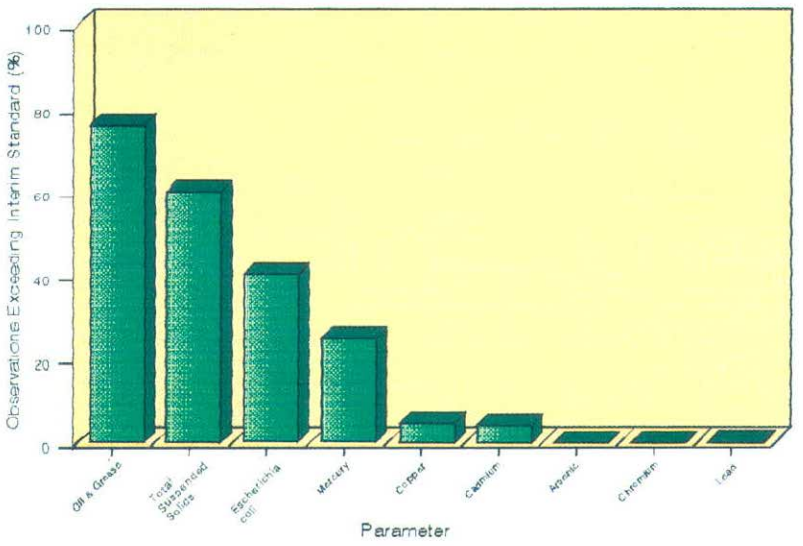


Figure 5. Malaysia: Status of Marine Water Quality, 1992

Oil Spill Incidents

Monitoring of oil spill incidents in the Malaysian waters continued to be one of the major activities of the Department of Environment. In 1992, 14 spill incidents were reported in all, nine in the South China Sea and the rest in the Straits of Melaka, as shown in Figure 6. The biggest of these occurred when the oil tanker Nagasaki Spirit collided with the container vessel Ocean Blessing in the Melaka Straits on September 20, spilling 13,000 tons of crude oil that would potentially bear upon the west coast of Peninsular Malaysia, and the Indonesian coast. In response, the National Contingency Plan and the Standard Operating Procedure (SOP) were mobilised, which entailed procuring equipment from Singapore and despatching a liaison officer to Indonesia. Clean-up operations on Langkawi, involving 120 civilians and 106 military personnel, yielded 1,380 tons of oil-contaminated debris subsequently disposed of at a local council-approved dumpsite. Subsequent to an on-hand inspection by the Honourable Minister of Science, Technology and the Environment, a research team from Universiti Sains Malaysia was commissioned by the DOE to carry out a short and long term study of the spill's economic and environmental impacts on the Exclusive Economic Zone and Malaysian waters.

Oil Spill Response Planning

To ensure the effectiveness of the National Oil Spill Contingency Plan, the membership of the National Committee on Oil Spill Control was reviewed, and the Plan itself updated on regular basis to ensure availability of necessary information needed in an emergency. Regional cooperation with Indonesia and Singapore under the Standard Operating Procedure (SOP) for Joint Oil Spill Combat in the Melaka and Johor Straits continued. In the wake of the Nagasaki Spirit collision (see next page) all parties stand to gain from experience shared and lessons learned while tackling the incident together. Among the needs identified are improvement of communication procedures with external parties such as salvors, ship owners and insurers, air and sea surveillance, status report and increased facsimile facilities.

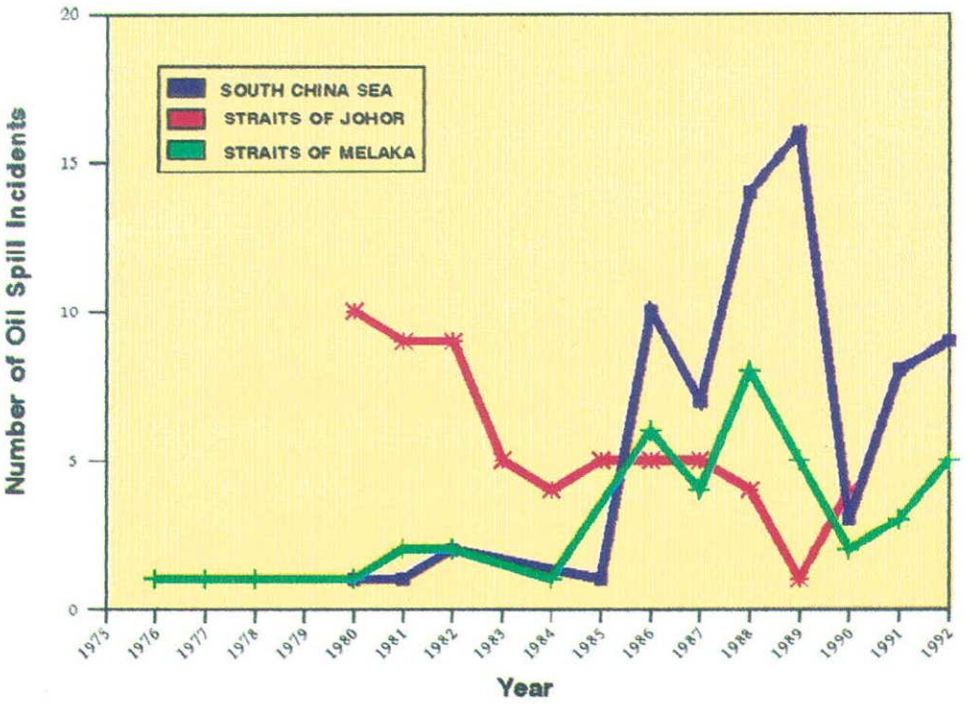


Figure 6. Malaysia: Yearly Trend of Oil Spill Incidents (1975 - 1992)

Salvage operation in progress in the wake of the Nagasaaki Spirit collision

POLLUTION ABATEMENT

CONTROL OF AGRO-BASED PRESCRIBED PREMISES

In 1992, a total of 270 crude palm oil (CPO) and 186 raw natural rubber (RNR) factories were licensed to comply with the standards of discharge specified under the Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations 1977 (Amendment) 1982 and Environmental Quality (Prescribed Premises) (Raw Natural Rubber) Regulations 1978, respectively. This is shown in Figure 7 which also illustrates the growth of the CPO industry by 2 per cent and corresponding decline of the RNR industry by 10 per cent compared to the previous year.

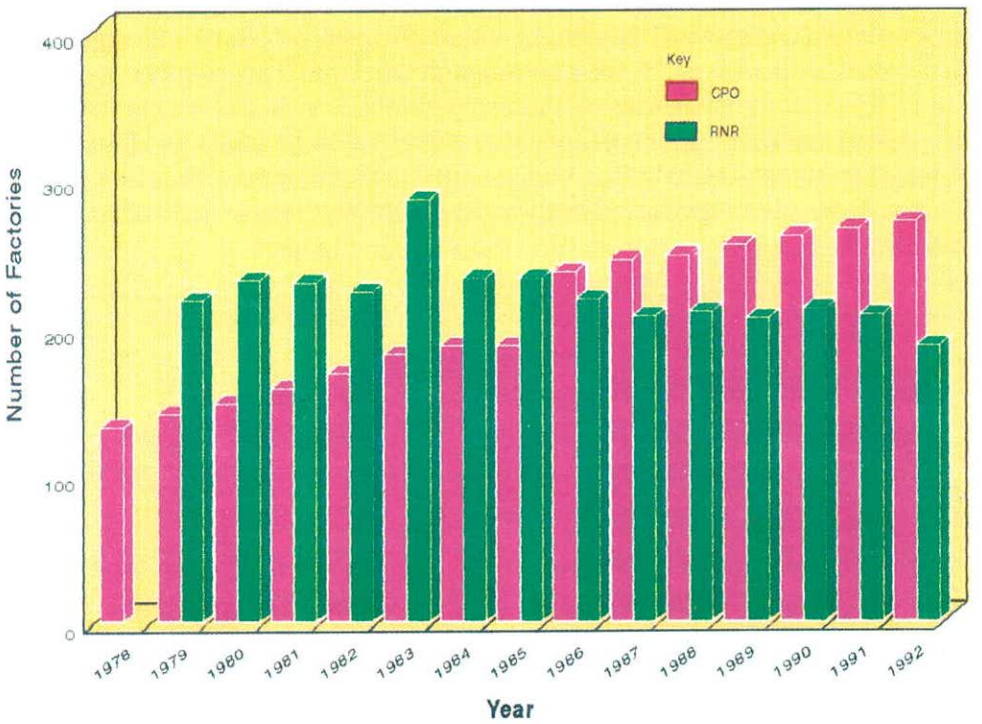


Figure 7. Malaysia: Licensed CPO and RNR Factories, 1978-1992

Late application penalty fees imposed amounted to RM 26,214 collectively for the two categories marking an average increase of more than 50 per cent over that collected the previous year, while the total revenue collected in the licensing processes went over RM 503,328. One RNR and seven CPO factories had their licences suspended; one RNR and fifteen CPO factories were taken to court for offences under the relevant Regulations and EQA 1974. In comparison, only four CPO factories had their licences suspended, and 3 RNR factories were taken to court in 1991.

The status of compliance of these agro-based industries is still not satisfactory, the main reason being lack of adequate maintenance of their effluent treatment systems. To this end, the DOE is intensifying its enforcement programmes to ensure 100 per cent compliance by this sector.

CONTROL OF NON-PRESCRIBED PREMISES

Outstanding issues amongst premises other than those prescribed (agro-based and scheduled wastes) are the low compliance with the EQA 1974 and Regulations thereunder by certain manufacturing industries, encroachment of economic activities on catchment areas which have serious repercussions on sustained water supply, encroachment of housing development onto industrial areas giving rise to residual pollution, and the lack of efficient on-site and off-site wastewater disposal facilities and air pollution control equipment.

Status of Compliance with the Environmental Quality (Clean Air) Regulations 1978

The rubber-based and sawmill industries continued to pose problems with regard to solid waste disposal, as per Figure 8, their common practice of disposal being open burning despite DOE's recommendations of alternative methods such as burying the wastes at approved sites, reuse or burning in approved and efficient incinerators. Quarrying and metal-based industries (mainly steel mills) experience problems in handling on-site air pollution control system such as water sprinkler, dust collectors or bag filters, effectively.

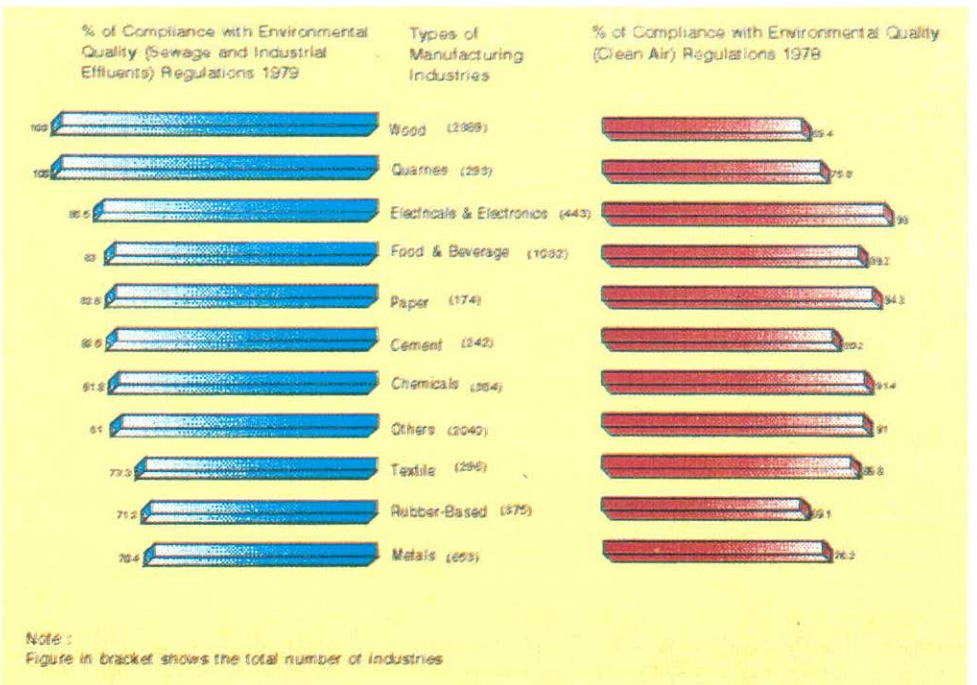


Figure 8. Malaysia: Compliance Status of Manufacturing Industries with Environmental Quality Regulations, 1992

Due to encroachment of housing onto the industrial areas giving rise to public complaints on noise and dust, enforcement was stepped up on industries implicated whereby two quarries were issued Prohibition Orders under Regulation 55 of the Environmental Quality (Clean Air) Regulations 1978, requiring ceasing of their operations.

Status of Compliance with the Environmental Quality (Sewage and Industrial Effluents) Regulations 1979

Figure 8 also shows that the metal-based industry, mainly electroplating, has the least compliance rate as most of the factories are of the backyard variety and have not put up sufficient facilities to treat effluents containing heavy metals such as cyanide, ferum and chromium. Despite a series of discussions between the DOE and the Electroplating Association on establishing central effluent treatment systems, no fruitful outcome is yet evident. Similarly, problems of rubber-based and textiles industries are associated with the lack of proper or efficient effluent treatment systems, particularly in respect of meeting the Chemical Oxygen Demand (COD) standard. To facilitate compliance amongst food and beverage manufacturing industries, a series of dialogues is planned, to commence early 1993.

Contravention Licence

Licences are issued under the EQA 1974 to assist and facilitate industries having genuine difficulties in complying with discharge standards. Contrary to some interpretations, these are not licences to pollute, rather they are interim measures to enable the industries to construct or upgrade their pollution control or waste treatment plants. Figure 9 shows the total number of applications for contravention licenses received since 1989, whether under Section 22(1) or 25(1) of the Act, related to emissions and effluents respectively, while Figures 10 and 11 give a breakdown of the licences issued.

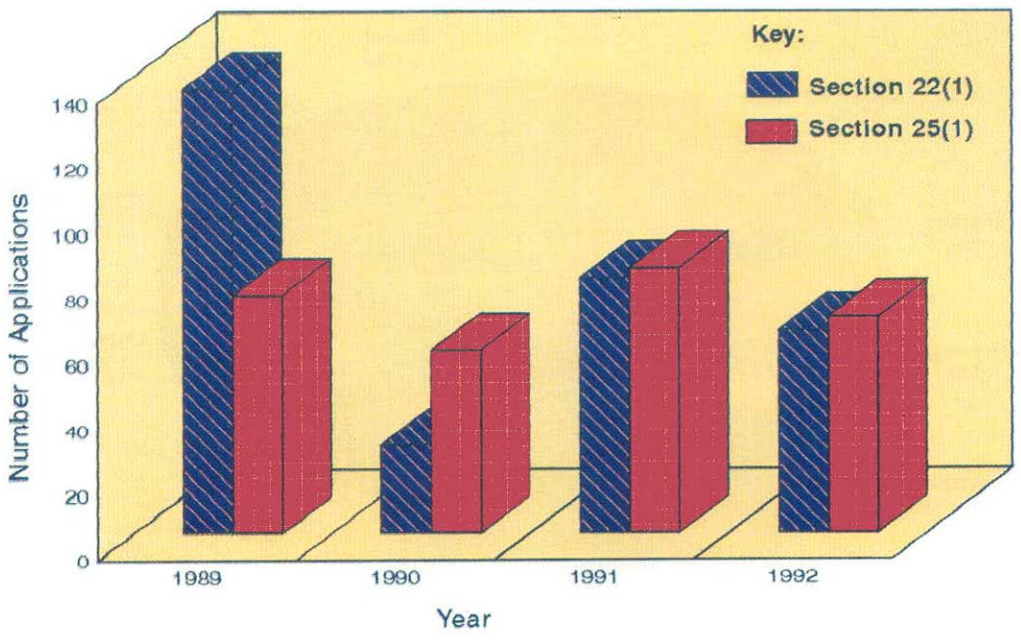


Figure 9. Malaysia: Number of Applications for Contravention Licences under Sections 22(1) and 25(1), Environmental Quality Act, 1974, 1989 - 1992

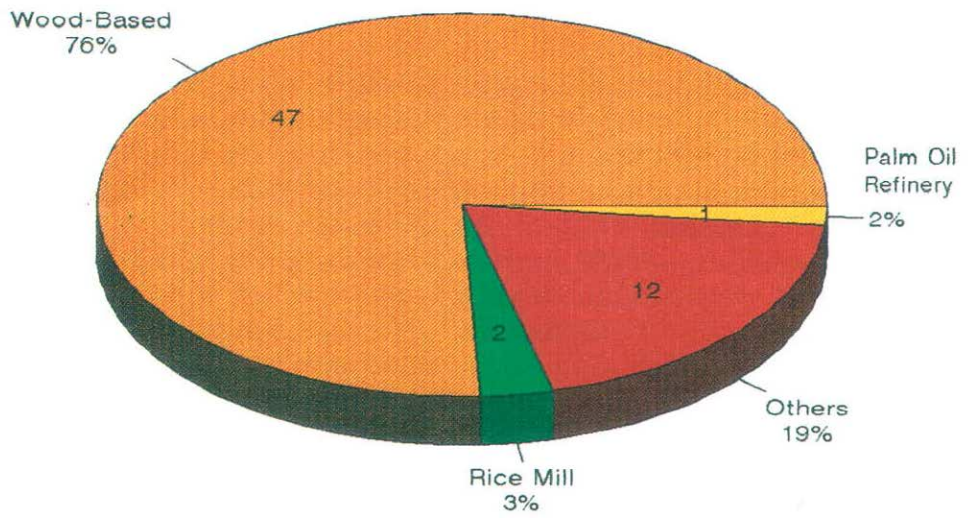


Figure 10. Malaysia: Percentage of Applications for Contravention Licences under Section 22(1), Environmental Quality Act, 1974 by Type of Industry, 1992

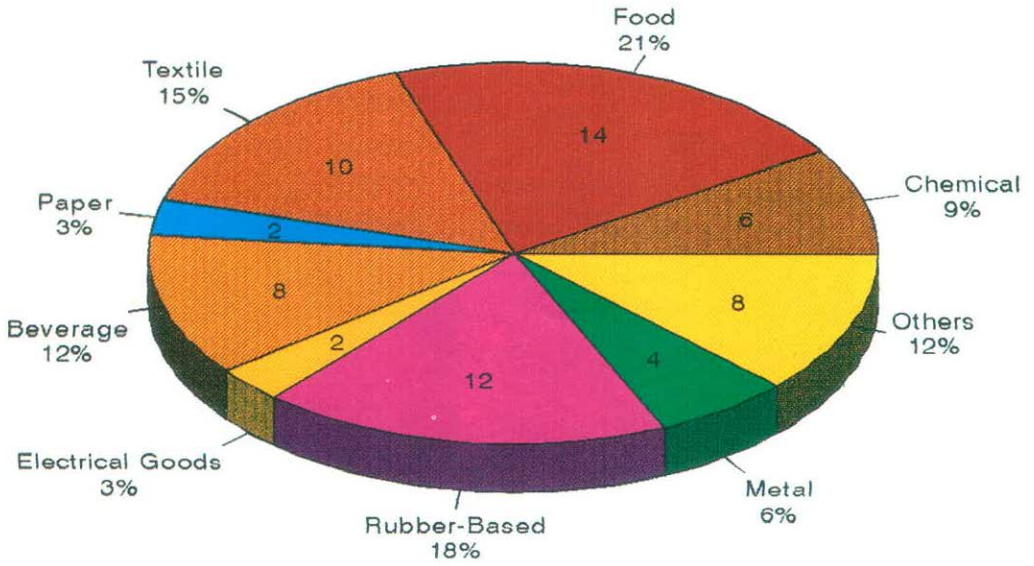


Figure 11. Malaysia: Percentage of Applications for Contravention Licences under Section 25(1), Environmental Quality Act, 1974 by Type of Industry, 1992

AIRBORNE SURVEILLANCE

The year 1992 marks a new era for DOE Enforcement with the initiation of the "Airborne Surveillance Programme" manned by the Royal Malaysian Police Airwing, to control polluting activities from the air. As shown in Figure 12, till late 1992 about 130 cases were reported by the Police Airwing including open burning (35%), black smoke emission (36%), excessive white smoke emission from chimneys (13%), dust pollution (6.5%) and water pollution (9.5%). Such information has enabled the DOE to issue 43 compounds, 4 notices, 4 warning letters and 2 prohibition orders, as well as institute 2 prosecution cases, upon offenders of the EQA 1974 as per Figure 13. A total of 16 cases have been referred to the Local Municipalities for enforcement action under their jurisdiction. To improve the quality of the airborne surveillance programmme, RM 180,000 from the Department's Sixth Malaysia Plan development budget was spent in the purchase of additional equipment required by the Police Airwing.

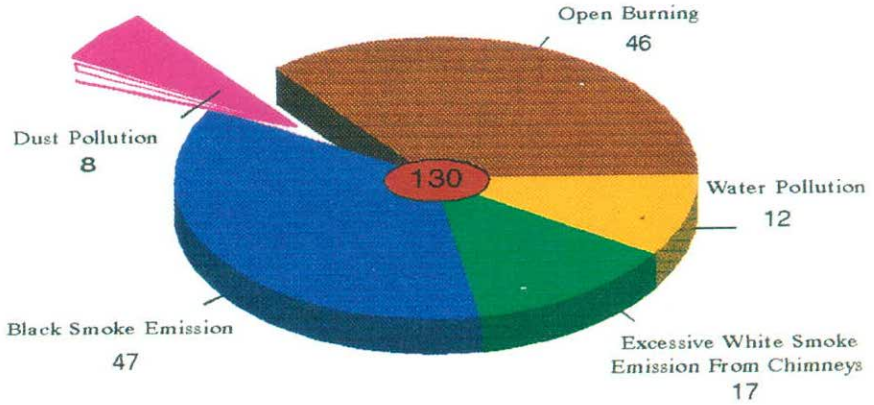


Figure 12. Malaysia: Distribution of Complaints Reported by Royal Malaysian Police (Air Wing), 1992

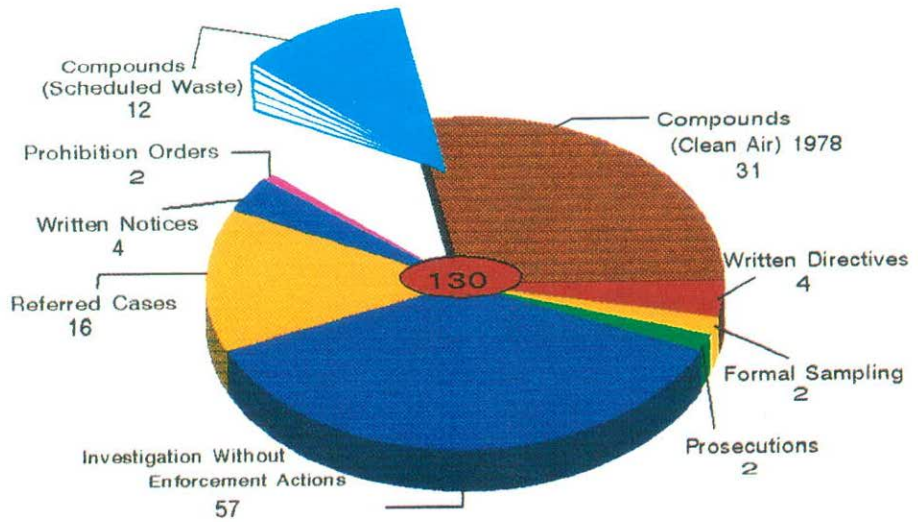


Figure 13. Malaysia: Distribution of Enforcement Actions Taken from the Activity of Airborne Surveillance between the Department of Environment and the Royal Malaysian Police (Air Wing), 1992

SCHEDULED WASTE MANAGEMENT

Through the year, the DOE received 63 applications to obtain prescribed premise licences for handling of scheduled wastes. In addition, 960 applications and enquiries for scheduled waste management at non-prescribed premises were also received. Figure 14 shows the number and percentages of waste generators which have submitted notification forms as of December 31, 1992. The great increase in the number of enquiries and requests for information was mainly due to an improved recording system adopted by the DOE compared to that of the previous year.

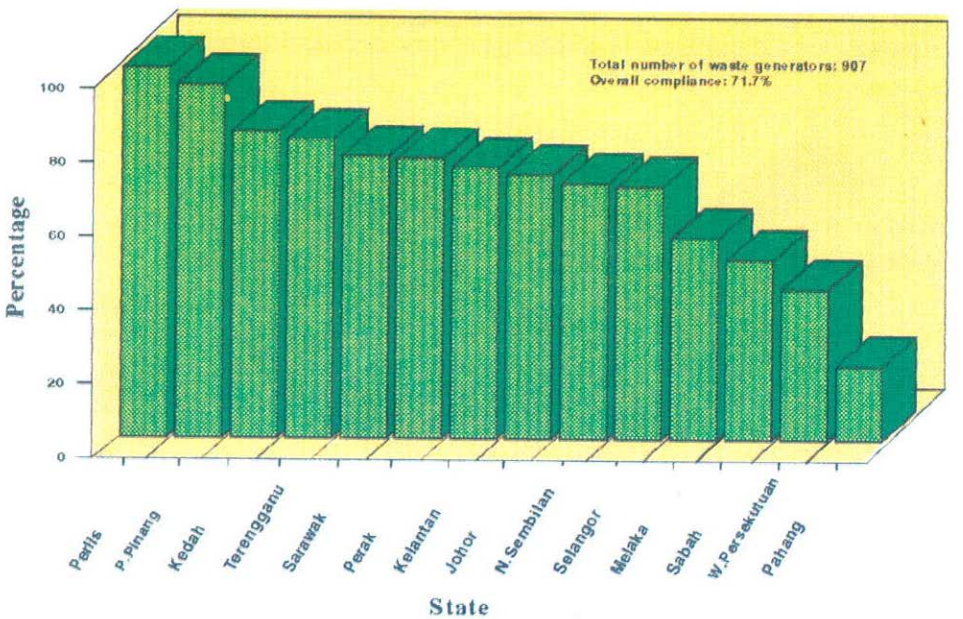


Figure 14. Malaysia: Distribution of Notification Forms Submitted According to Number of Waste Generators and State, 31 December, 1992

Integrated Facility for Scheduled Wastes

The detailed EIA study of the proposed site for the above facility at Tanah Merah Estate, Port Dickson District, Negri Sembilan, which began in 1991 by the consultants for the consortium led by I. Kruger Engineering A/S, continued, with the Ad-hoc EIA Panel meeting three times during the year to deliberate on the report. The EIA report was also opened for public comments, and recommendations from the EIA Panel were submitted to the Director-General of DOE for consideration. Dialogue sessions arranged between the Negri Sembilan State Government, the Ministry of Science, Technology and the Environment (MOSTE) and DOE were also held to explain the project proposal to the residents in the vicinity of the proposed facility as well as industries and government agencies concerned.

Artist Impression of the Proposed Integrated Facility for Scheduled Wastes

Some progress was also made in the establishment of transfer stations for scheduled wastes in the states of Pulau Pinang and Kedah. Pulau Pinang proposed two sites namely, in Bukit Minyak and Prai Industrial Estate (Phase IV), while a part of the Kulim High Technology Industrial Park was proposed by Kedah for the location of the transfer stations. Meanwhile, the DOE also participated in meetings concerning the establishment of a temporary scheduled waste storage area proposed by the Selangor State Government.

Implementation of Basel Convention

To implement the Malaysia Cabinet Ministers' November 1991 decision that Malaysia should become a party to the Convention after a control mechanism under the Customs Act 1967 is developed, meetings were held in 1992 with the relevant agencies to propose amendments to the Customs' Prohibition of Import and Export Order 1988 to include a list of wastes to be controlled. The draft amendment was agreed upon between the DOE and Customs Department in December 1992 and submitted to the Attorney General's Chamber for approval. All 10 waste-export/import applications received were approved in 1992.

CONTROL OF MOBILE SOURCES

Motor Vehicles (Control of Smoke and Gas Emission) Rules 1977, Environmental Quality (Control of Lead Concentration) Regulations 1985 and Environmental Quality (Motor Vehicle Noise) Regulations 1987 are three (3) sets of Regulations being enforced by the Mobile Sources Unit to control emission from motor vehicles.

To further reduce vehicular pollution, two (2) sets of Regulations were formulated based on United Nations Economic Commissions for Europe (UN/ECE) Regulations namely, UN/ECE R 15.04 and both R 24 and R 49 for gasoline and diesel engines respectively. Further measures in the immediate future will require all new models of petrol driven vehicles to comply with a new standard based on EEC 91/441 which makes installation of catalytic converters compulsory. As a result of a dialogue on May 12, 1992 between the Minister of Science, Technology and the Environment with the Motor Vehicles Assemblers and Traders Association, an announcement was made that beginning June 1, 1992, all new petrol and diesel driven vehicles, whether locally assembled or imported would have to comply to the above Regulations.

Black Smoke Emissions

A total of 310 enforcement campaigns were conducted in 1992 with the cooperation of the Traffic Police and Road Transport Department, whereby a total of 30,963 vehicles were tested, out of which 6,953 were issued summonses for violating the stipulated limit of 50 Hartridge Smoke Units (HSU). Figure 15 shows the overall percentage of compliance since 1988 with the percentage for 1992 being 78 per cent, while Figure 16 gives compliance percentage by vehicle type. Results of enforcement according to states are given in Figure 17.

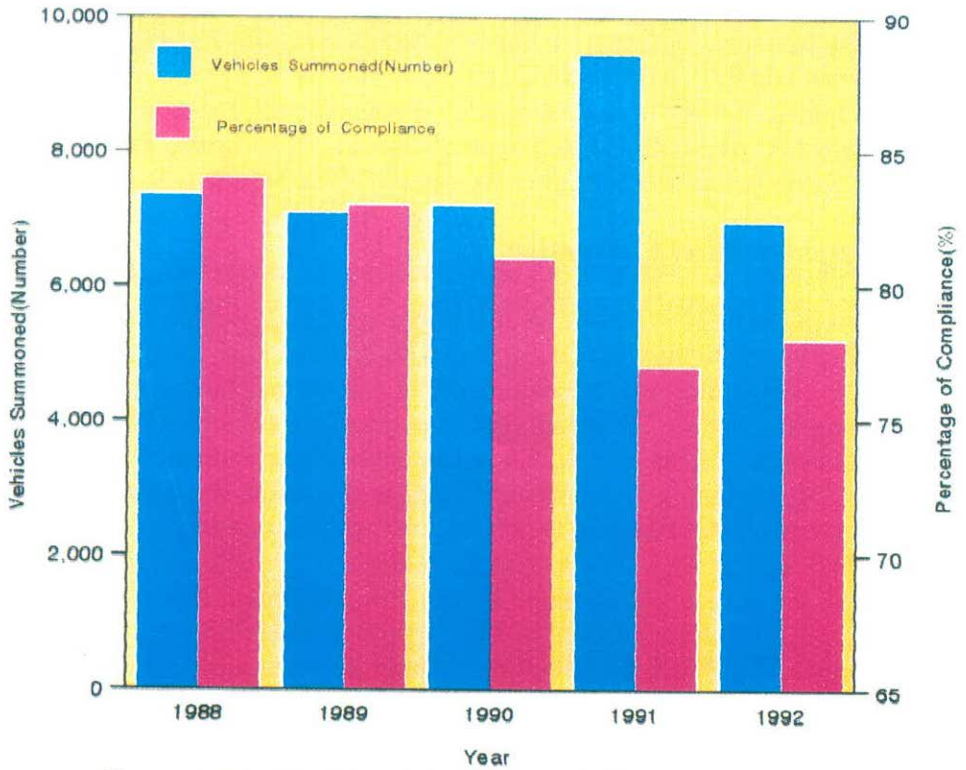


Figure 15. Malaysia: Enforcement of Motor Vehicles (Control of Smoke and Gas Emission) Rules 1977. Vehicles Summoned and Percentage of Compliance, 1988-1992.

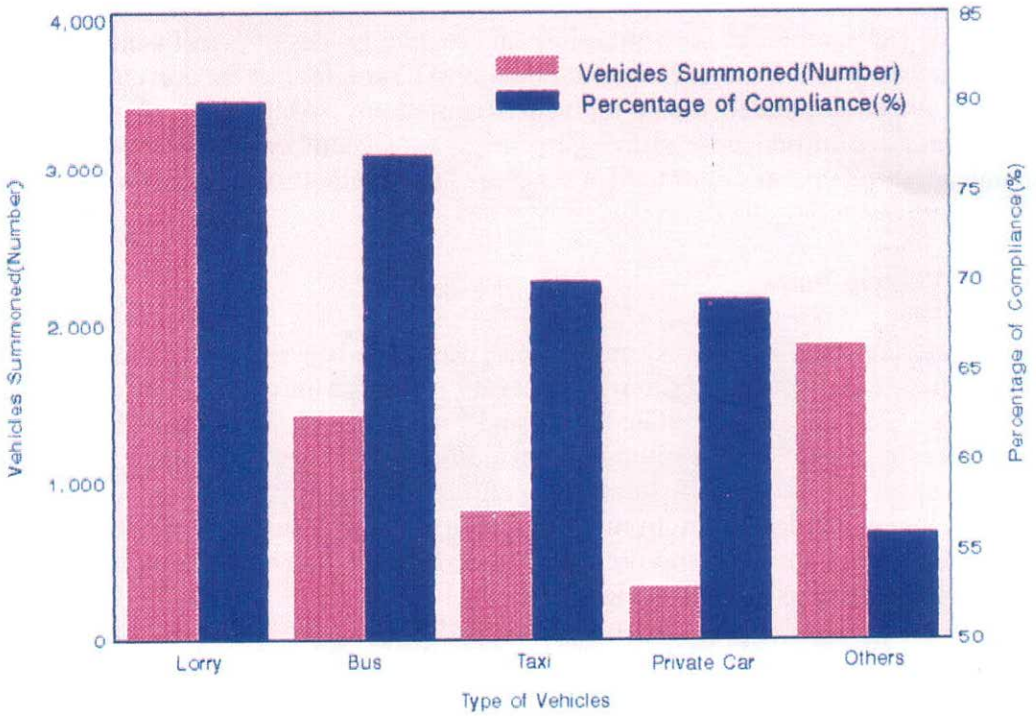


Figure 16. Malaysia: Enforcement of Motor Vehicles(Control of Smoke and Gas Emission) Rules 1977. Vehicles Summoned and Percentage of Compliance According to Type of Vehicles, 1992.

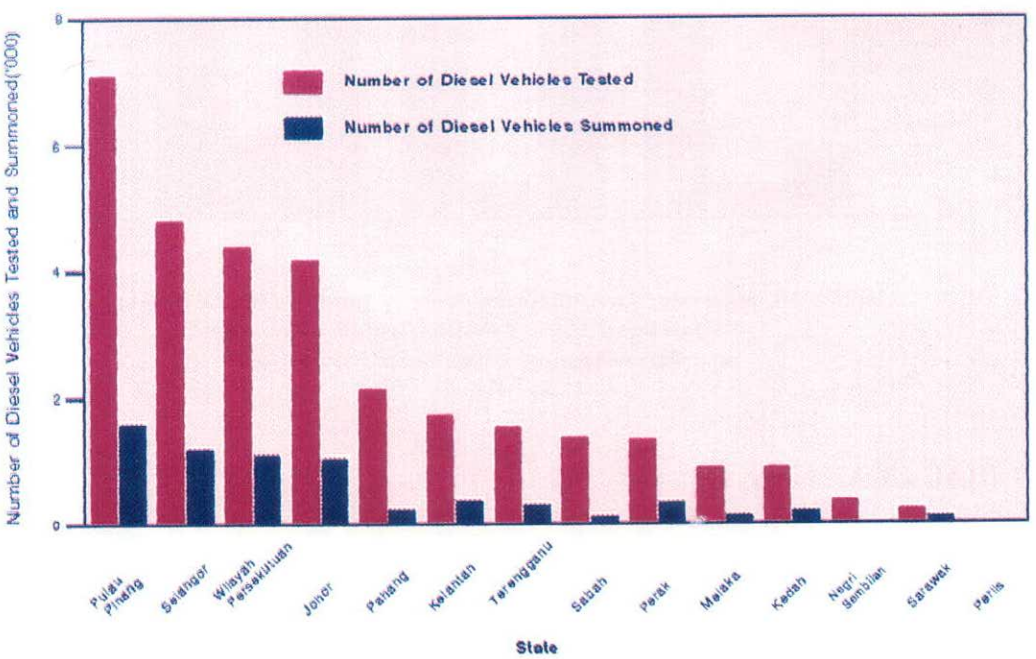


Figure 17. Malaysia: Diesel Powered Vehicles Inspected and Summoned for Excessive Smoke Emission by State, 1992.

Lead in Motor Gasoline

A total of 186 samples of both premium and regular grades of petrol were taken for analyses from petrol kiosks selected at random. All samples met the current lead level of 0.15 g/l as stipulated under relevant Regulations. At present, almost all oil industries have introduced lead-free gasoline. As at December 31, 1992 the retail sale of unleaded gasoline amounts to 31.4 per cent of the total sale of gasoline in Malaysia.

Motor Vehicle Noise

A special campaign to curb noisy motorcycles was carried out by the DOE headquarters in commemoration of World Environment Day 1992 with the cooperation of the DOE Selangor/ Federal Territory State Office and Traffic Police, at Merdeka Square and Jalan Kuching Toll Plaza, resulting in 170 motorcycles being tested and 127 of them being issued summonses. A total of 61 enforcement campaigns were carried out through the year under the Environmental Quality (Motor Vehicle Noise) Regulations 1987, whereby out of 2,476 motorcycles tested, 1,491 (60 per cent) complied with the emission standard as shown in Figure 18.

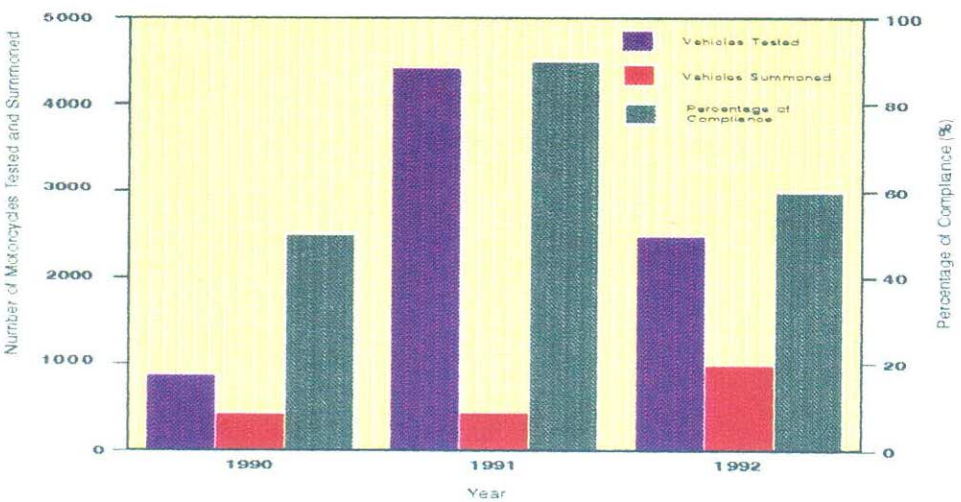


Figure 18. Malaysia: Environmental Quality (Motor Vehicle Noise) Regulations 1987. Vehicles Tested, Summoned and Percentage of Compliance, 1990-1992.

PUBLIC COMPLAINTS

In 1992, 1,639 complaints were received, showing an increase of 102 per cent from the previous year, as per Figure 19. The trend and the distribution of complaint cases by states varied little from 1991, with Selangor, as usual, receiving the highest number of complaint cases (27 per cent) followed by Kuala Lumpur (15 per cent), while states receiving the least were Sabah (2 per cent) and Perlis (0.4 per cent). Figure 20 shows the nature of complaints by state, while Figure 21 gives the distribution by type. Most complaints were pertaining to air (69 per cent) followed by water (14 per cent), noise (11 per cent) and others (6 per cent).

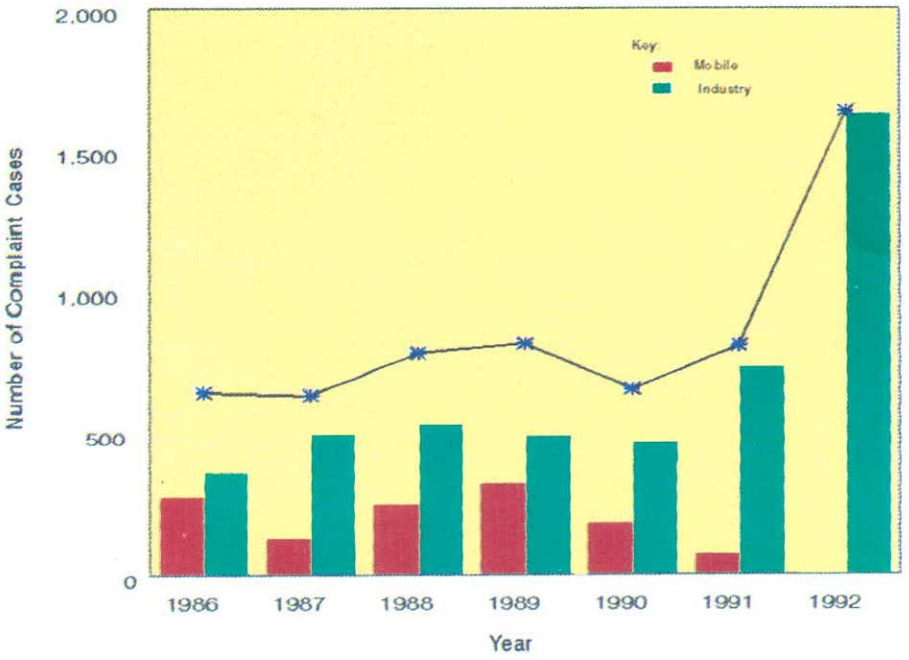


Figure 19. Malaysia: Trend in the Number of Complaint Cases Received by the Department of Environment, 1986-1992

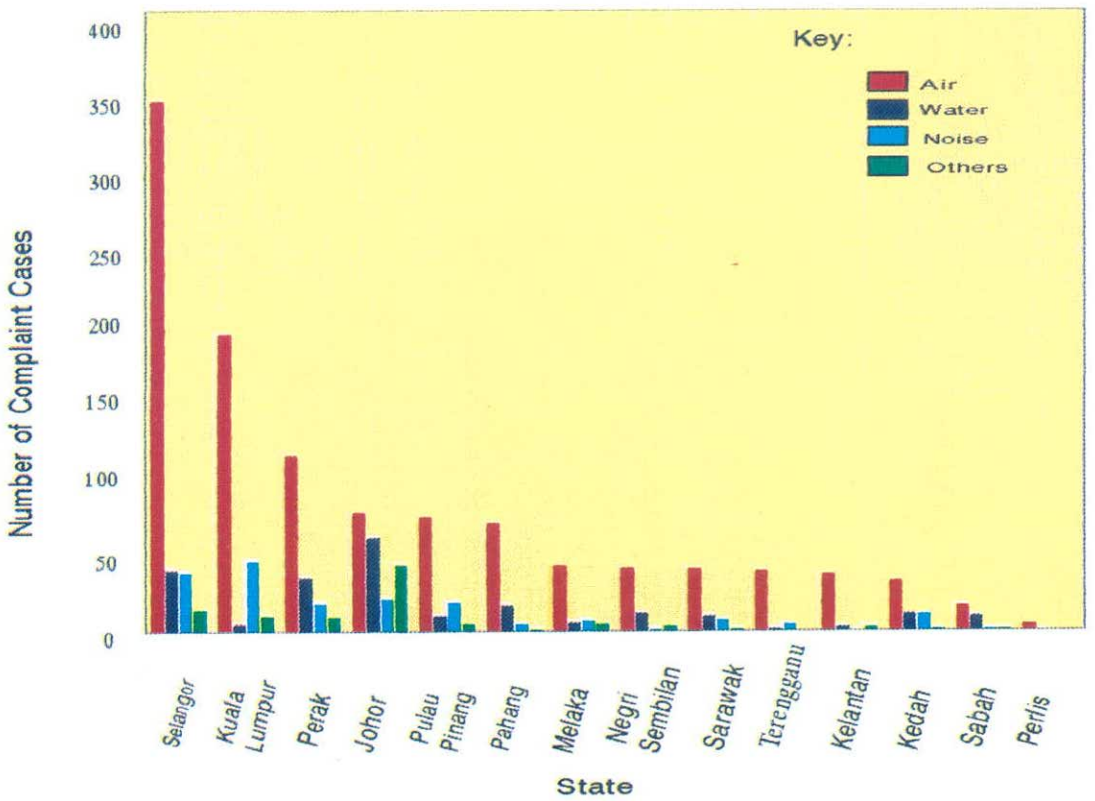


Figure 20. Malaysia: Nature of Pollution Complaints by State, 1992

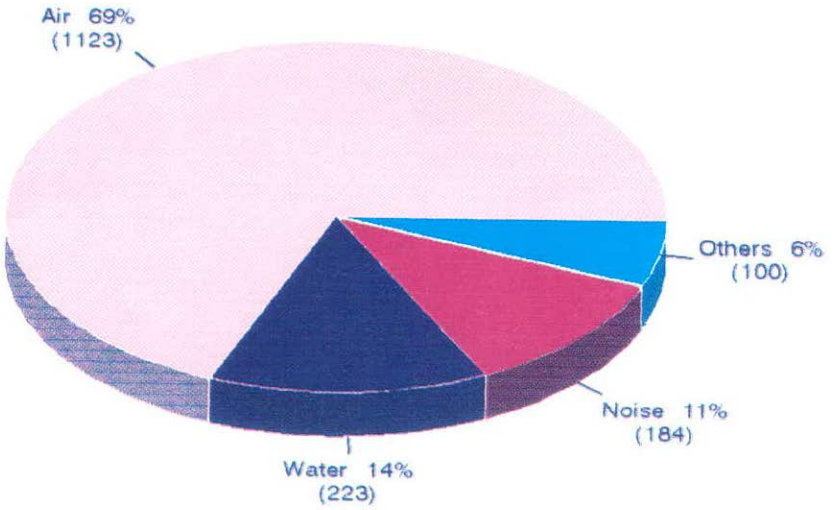


Figure 21. Malaysia: Nature of Complaints Received by Department of Environment, 1992

Air-Related Complaints

Complaints on air pollution came largely from sources other than industries (46 per cent), followed by wood-based industries (24 per cent) and disposal sites (7 per cent) as per Figure 22. Major industrial air pollution complaints were due to particulates (28 per cent), smoke, fumes and odour (16 per cent).

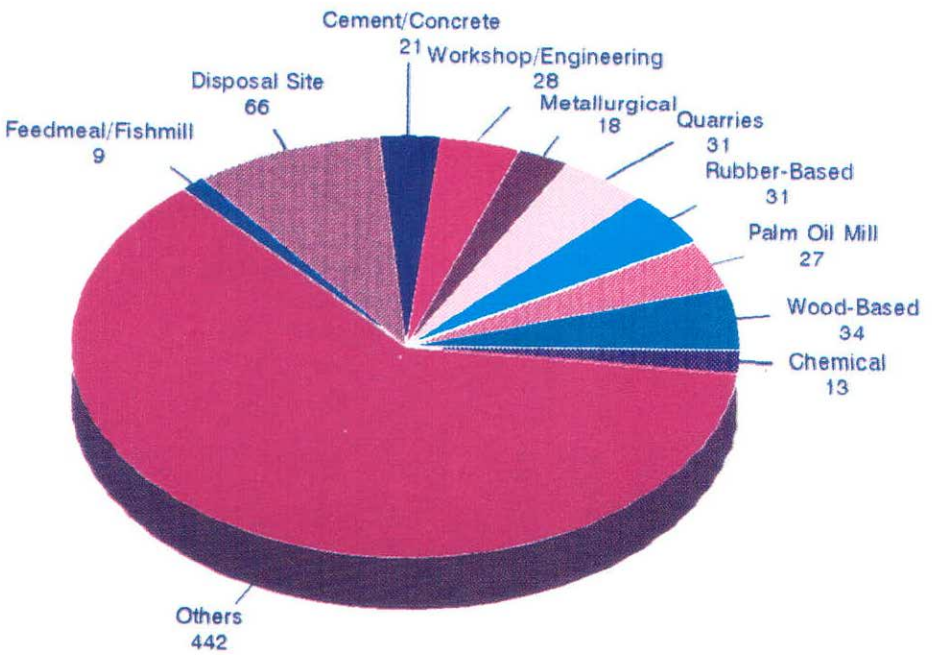


Figure 22. Malaysia: Sources of Air Pollution Complaints, 1992

Water-Related Complaints

Non-industrial sources recorded the highest (27 per cent) cases of water pollution complaints followed by industries other than those specified (24 per cent), rubber mills (11 per cent) and palm oil mills (10 per cent) as shown in Figure 23.

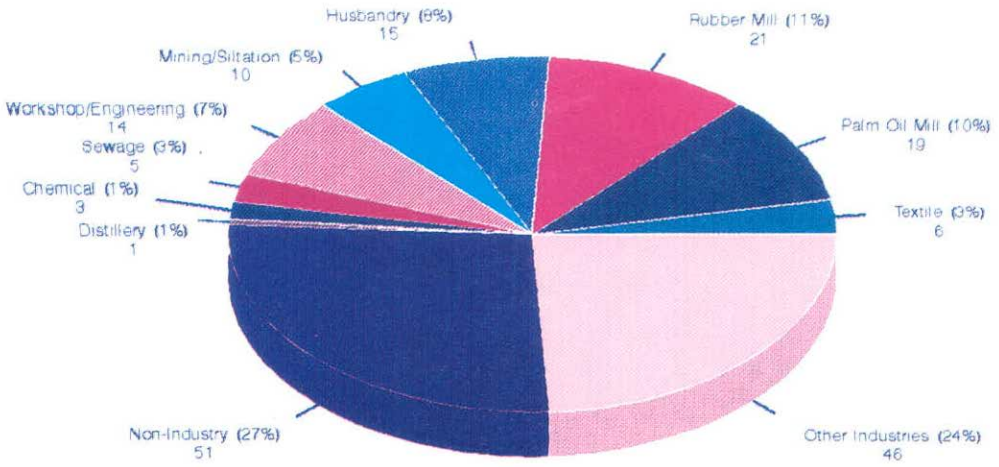


Figure 23. Malaysia: Sources of Water Pollution Complaints,1992

LEGAL ACTION

Prosecutions

A total of 130 cases which contravened the law were taken to court in 1992 showing the highest number of prosecution cases since 1980, as per Figure 24. Fines collected from the 130 cases amounted to RM 149,050, indicating an increase of 71 per cent over the previous year. The distribution of offences prosecuted in each state during the year is illustrated in Figure 25, while Figure 26 shows the accumulation of cases in the period 1980-1992. Out of the 130 cases prosecuted, 51 per cent were offences charged under the EQA 1974 while the rest were charged under the relevant Regulations under the Act. Majority of offences contravening the Act involved the discharge of wastes into inland waters without licence while those contravening the Regulations were mainly for establishing a new or altered source without prior written permission from the Director-General of Environmental Quality, and the emission of dark smoke and open burning of wastes.

Compounds

A total of RM 588,700 worth of fines were collected from 1,540 compound cases in 1992, showing an increase of 44 per cent over the previous year, while the total

number of cases increased by 45 per cent. 74 per cent of the total number of compound cases were for offences under the Environmental Quality (Clean Air) Regulations 1978 which consisted largely of open burning of wastes, installation of fuel burning equipment without written approval and operation of facilities without control equipment. The remaining were offences breaching the Environmental Quality (Scheduled Wastes) Regulations 1989, of which a large portion involves the disposal of scheduled wastes not at the prescribed premises.

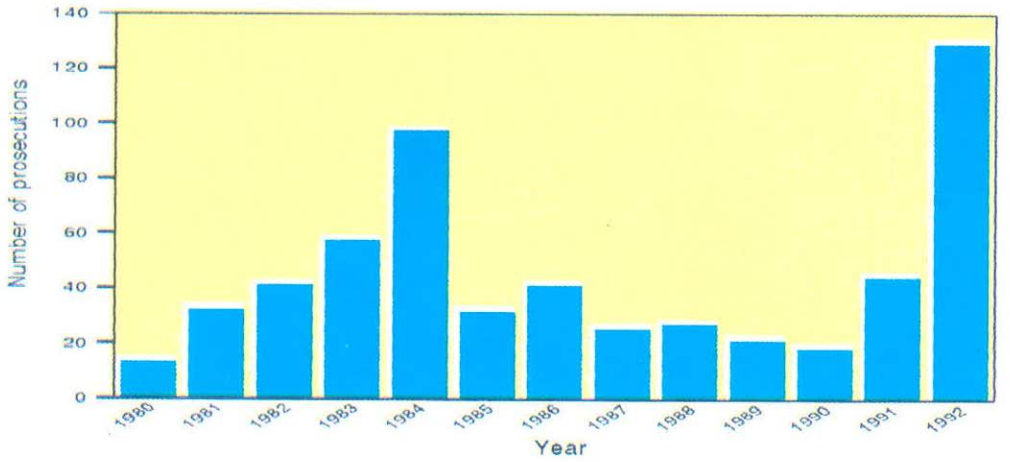


Figure 24. Malaysia: Offences Prosecuted under the Environmental Quality Act, 1974 and Regulations Made Thereunder. Number by Year, 1980 - 1992

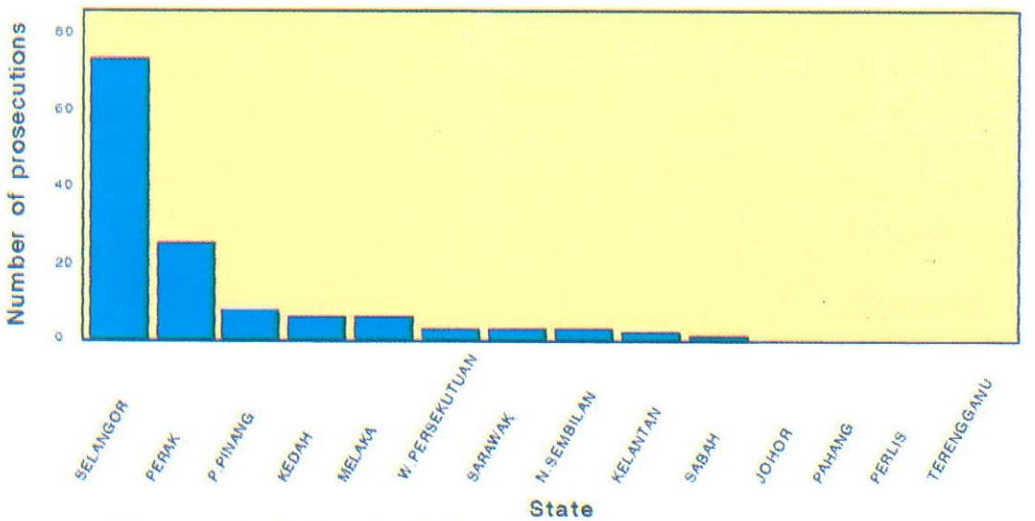


Figure 25. Malaysia: Offences Prosecuted under the Environmental Quality Act, 1974 and Regulations Made Thereunder.Number by State, 1992.

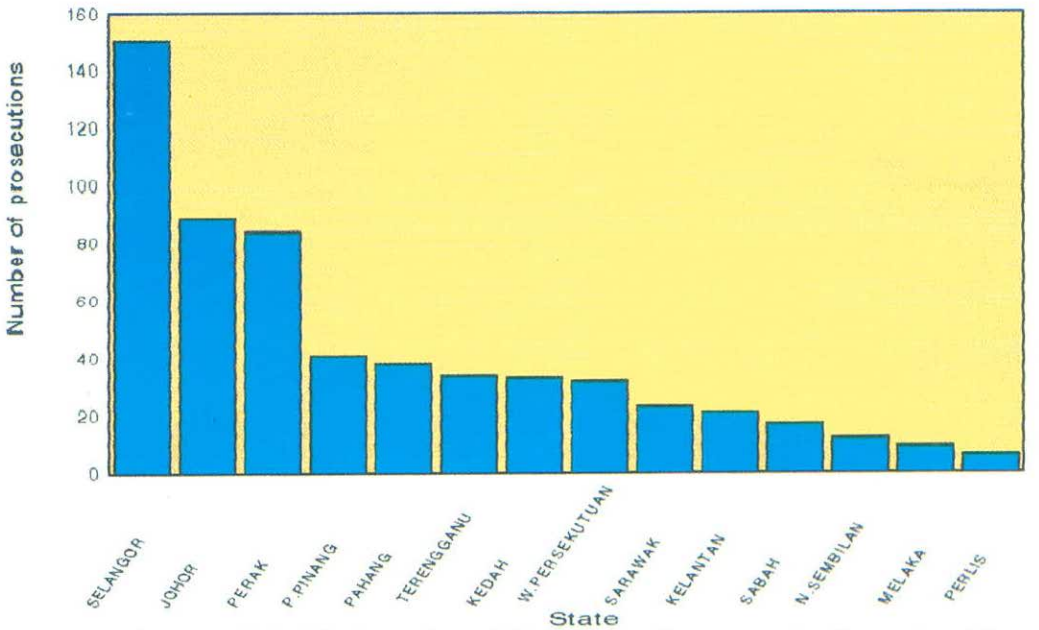


Figure 26. Malaysia: Offences Prosecuted under the Environmental Quality Act, 1974 and Regulations Made Thereunder.Number by State, 1980-1992

A typical aerial shot taken during the DOE-Royal Malaysian Police (Air Wing) airborne surveillance

ENVIRONMENTAL ASSESSMENT

OVERVIEW

The capacity for implementation of the Environmental Impact Assessment (EIA) procedure in Malaysia was strengthened in 1992 through the increase in the number of personnel and several changes in administrative procedure for reviewing of EIA reports within the DOE.

Arising from concerns expressed regarding unnecessary delay in decision-making, reports and recommendations were produced separately by the Malaysian Administrative Management and Modernisation Planning Unit (MAMPU) and a special committee formed under the EQC. The Department subsequently began to implement some of the recommendations with a view to implementing the others. Efforts to strengthen the effectiveness of EIA implementation was also considered by the Environmental Law Review Committee whose recommendations include amendment of the EIA requirement affecting hill development and for the State Governments to institute EIA requirement in their resource-based laws.

Another milestone was the establishment of a Geographical Information System (GIS) to develop resource information database in visual and graphic form for resource planning and management. A project on Planning Environmentally Sound Development (ESD) sponsored by UNEP was completed and a workshop held in October 1992. Throughout the year, the Department continued to play its part in promotion of industrial development by advising foreign and local investors through its State Offices and its representative at MIDA.

EIA NOTIFICATION AND REVIEW

Despite the absence of requirement for notification, the Department continued to register projects subject to EIA on being notified either by the proponents or through reports and announcements in the mass media. In 1992, a total of 153 proposed projects subject to EIA were monitored compared to 181 in 1991, and among these the highest number are related to resorts and recreational development (18 per cent), followed by housing (16 per cent) and infrastructure and quarry with 14 per cent each.

The number of EIA reports submitted to the DOE in 1992 increased by 11 per cent over 1991 and 18 times over 1988 as shown in Figure 27. Out of 195 reports received, 182 are preliminary EIA reports; one a detailed EIA report and 12 risk analyses associated with hazardous installations. The detailed EIA report was prepared for the Malaysian Integrated Scheduled Wastes Collection, Treatment and Disposal Project in Negri Sembilan Darul Khusus and was reviewed by an ad hoc review panel appointed by the Director-General of Environmental Quality. By the fifth year of EIA implementation the number of EIA reports submitted to the Department totalled 529 reports of which 490 (93 per cent) comprise preliminary EIA, 33 (6 per cent) risk analyses and six detailed EIA reports.

PRESCRIBED ACTIVITIES AND PROJECT CATEGORISATION

To date, the highest number of reports submitted since the enforcement of the EIA Order 1987, were for infrastructure-related development, accounting for 13 per cent of the total, followed by resort development (12 per cent) and industry (10 per cent). It is interesting to note that no reports were submitted for major transportation development such as airport, port and railway. Figure 28 compares the distribution

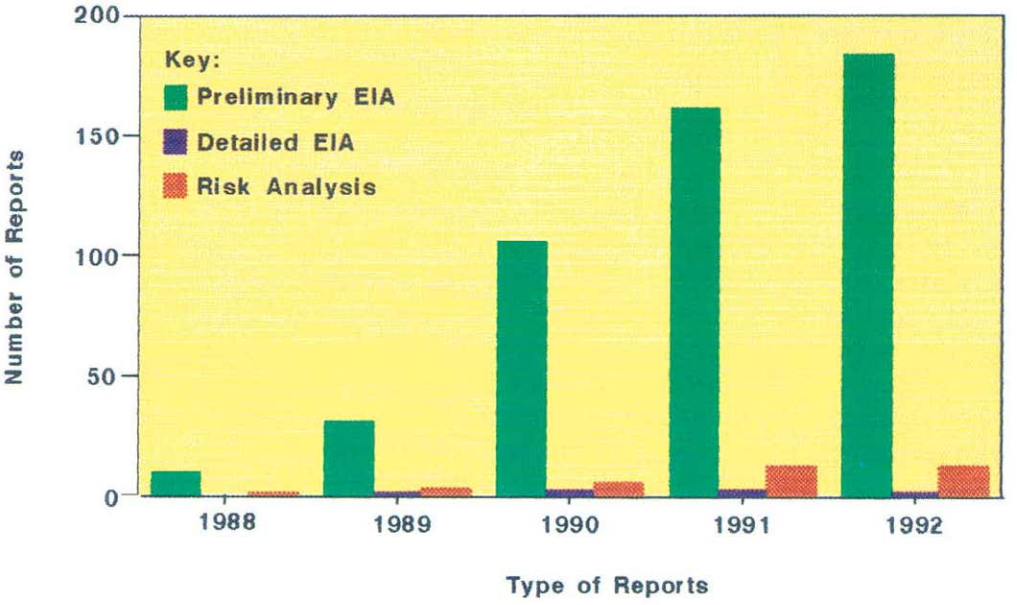


Figure 27. Department of Environment: Type of EIA Reports Received, 1988-1992

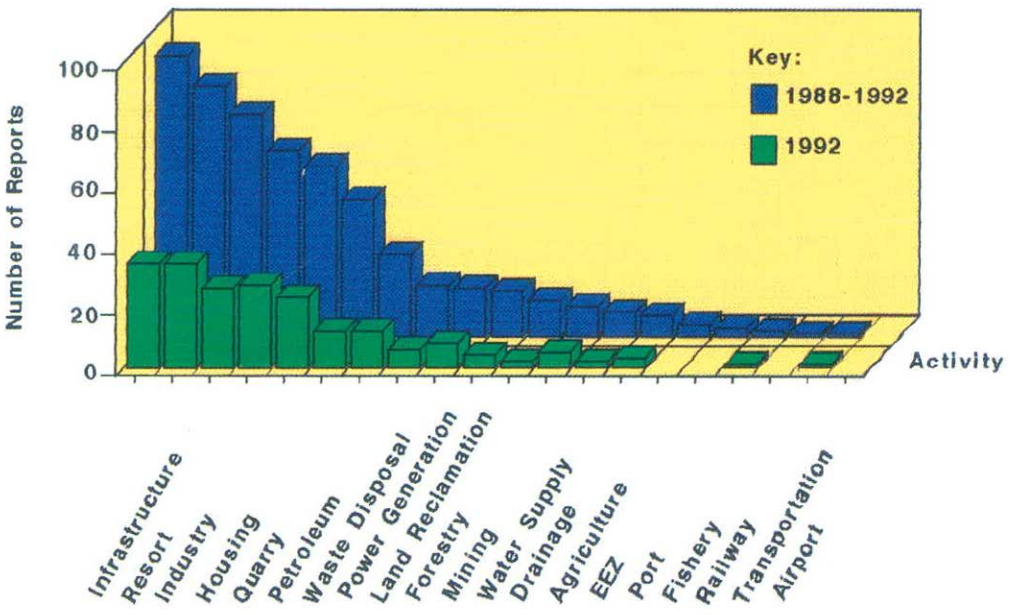


Figure 28. Department of Environment: Number of EIA Reports Received by Category of Activity, 1988-1992

of reports according to the category of activities both for 1992 and the period 1988-1992.

In 1992, the total number of reports to be reviewed soared to 313, including 118 brought forward from 1991. By December 31, 1992, a total of 250 reports (79 per cent) had been successfully reviewed. The remainder were either still being reviewed or decision deferred pending the submission of supplementary information. Figure 29a shows the number of EIA reports reviewed each year throughout the period 1988-1992, while Figure 29b indicates an improvement in processing time.

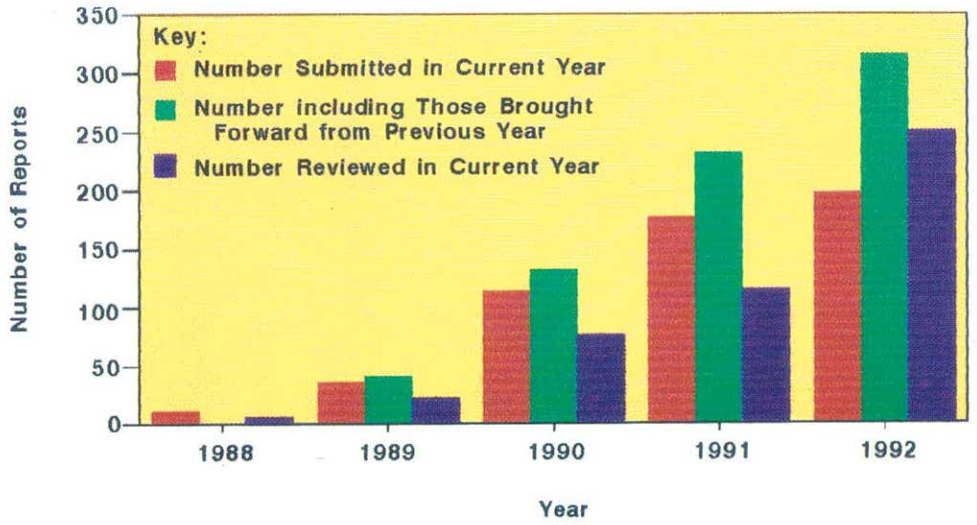


Figure 29a. Department of Environment: Number of EIA Reports Submitted and Reviewed, 1988-1992

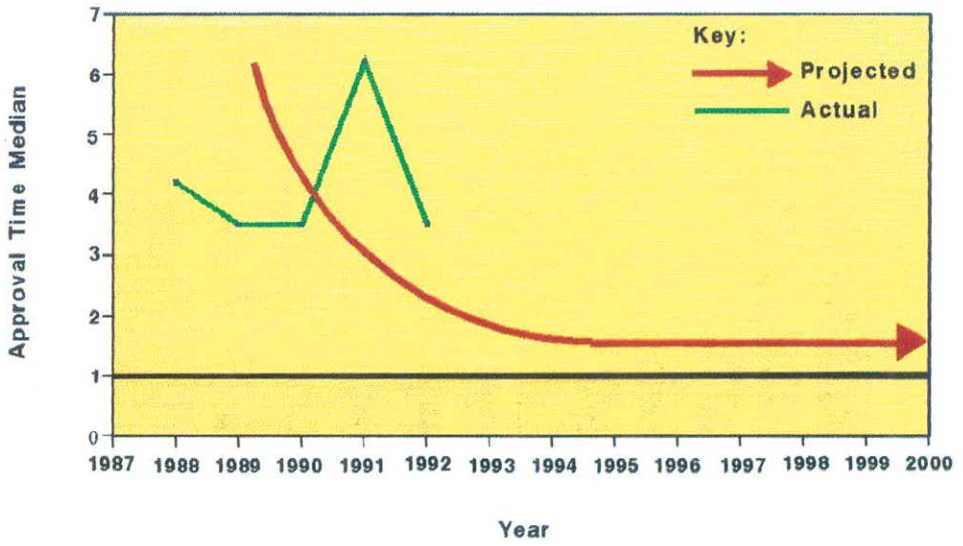


Figure 29b. Department of Environment: Time Taken for EIA Reports Approval

The encouraging increase in EIA reviewing performance could be attributed partly to the strengthening of organisational structure which includes the completion of the recruitment exercise by the end of 1992. The number of personnel assigned to the Assessment Section has increased from 11 to 21 officers. The monthly average number of EIA reports reviewed in 1992 is 21 compared to 9 in 1991.

Of the 195 reports received in 1992, 121 reports were approved, 13 rejected, one withdrawn by the project proponent and the remaining 60 reports brought forward to 1993. Thus, by year's end the number of EIA reports approved since April 1, 1988 is 352 reports (66 per cent), 104 reports (19 per cent) rejected, and 11 reports withdrawn by the proponents. Figure 30 compares the status of EIA reports processed annually, over the period 1988-1992.

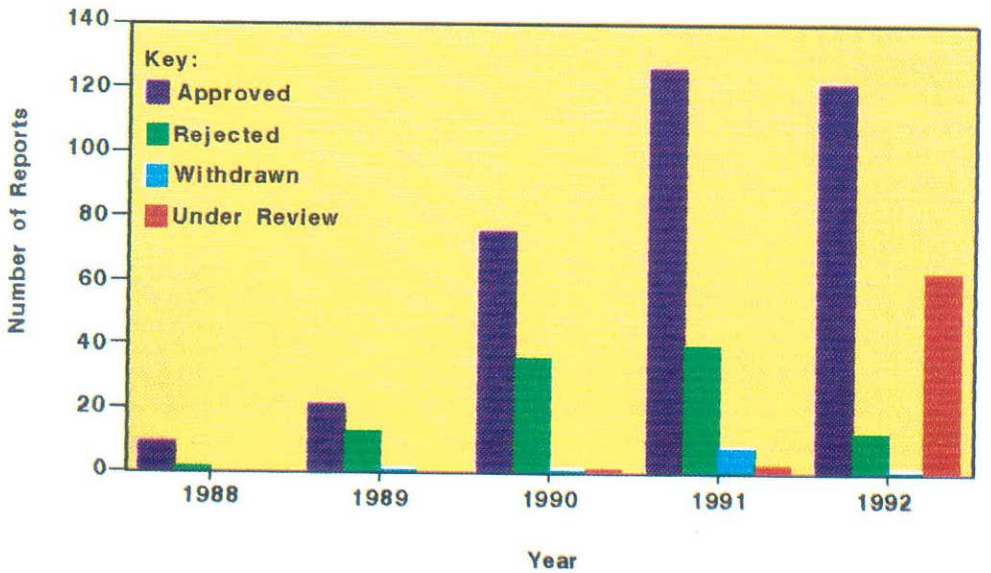


Figure 30. Department of Environment: Number of EIA Reports Processed, 1988-1992

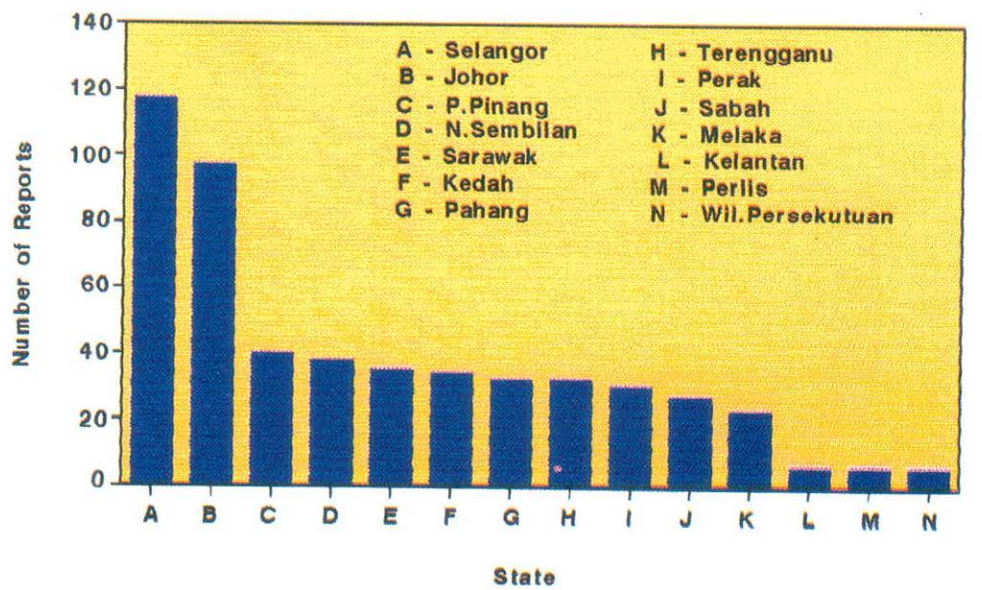


Figure 31. Department of Environment: Distribution of EIA Reports Received, by State, 1988-1992

Analysis of the distribution of EIA reports by states over the period of EIA implementation indicates a similar trend to 1991, with Selangor and Johor far outnumbering the other states, accounting for 40 per cent of the total number of reports submitted. Kelantan, Perlis and Wilayah Persekutuan (Kuala Lumpur and Labuan) maintain their status as the states with the least number of reports (6 each) whilst other states each contribute between 23 to 40 reports. Figure 31 illustrates the distribution of EIA reports in the states for the period 1988-1992.

ISSUES RELATED TO EIA IMPLEMENTATION

Among the issues and problems raised since the start of the EIA implementation were: lack of awareness on the strength of EIA as a planning tool; perception that EIA is a "stumbling block" to development leading to delay in obtaining decision on EIA reports; timing of report submission; and problems related to legal and enforcement matters.

The EIA procedure in Malaysia was designed to follow the integrated project planning concept requiring the EIA to be carried out at the pre-feasibility and feasibility stages. Submission of reports without adequate study and late in the project cycle reduces the EIA to a mere formality. The problem is further aggravated when no options are presented for siting, technology and mitigation. Based on DOE's records, the weaknesses of EIA reports identified are as follows:

- poor description of project concept and inadequate statement of need;
- lack of baseline data on environmental quality;
- poor prediction of impacts particularly in quantitative terms;
- insufficient, or absence of, alternatives for mitigation and recommendation of the most effective control measure;
- lack of alternatives for siting, technology for production and pollution control;
- failure to propose an environmental monitoring programme; and
- inconsistency in information reported.

The DOE has also assessed the quality of EIA reports submitted in the last four years, resulting in the following categories for grading, the bracketed figures giving the percentage distribution:

I Good, no additional information required (11%)
II Satisfactory, requiring some supplementary information/verification (66%)
III Poor, do not meet requirements (23%)

PREPARATION OF EIA REPORTS: TIME & COSTS

The Department has continued to monitor the costs and duration of EIA preparation. To date, the costs of EIA preparation lies between RM 4,000 - RM 2.27 million. The minimum cost for an EIA is for a recreational development project which took one man-month whilst the maximum is for a petroleum development project that took 71 man-months. The cost of EIA in comparison to the total project cost is found to be in the range of 0.001 per cent (a recreational project) to 1.96 per cent (a quarry project).

IMPACT AND COMPLIANCE MONITORING

By December 31, 1992, 352 EIA reports had been approved and of these, 244 project proponents were contacted regarding their status of implementation with 71 per cent responding. Of the 172 respondents, the majority (73 per cent) are completed/ operational, or at various stages of construction, or are carrying out earthworks, with the remaining 27 per cent either postponed or terminated.

To date, the Department has received 20 monitoring programmes from project proponents. As part of DOE's efforts to attend to complaints of on-going approved EIA projects, a Working-Group Committee on Pulau Redang Development was set up in 1992 to assess and monitor closely environmental impacts resulting from the said project.

ENHANCEMENT OF EIA PROCEDURE

MAMPU Study

A study to stream-line the EIA implementation procedure conducted by the Malaysian Administrative Modernisation and Manpower Planning Unit (MAMPU) recommended the following measures to improve the effectiveness of the EIA Procedure:

A. DOE to undertake:

- o Simplification of EIA Report Format;
- o Preparation of checklist on types of information required;
- o Issuance of specific guidelines by type of activities;
- o Formalisation of EIA Consultants Registration;
- o Establishment of One-Stop Agency for EIA Reports Approval;
- o Appointment of EIA Review Panel to expedite EIA reports review process; and
- o Upgrading of skills and expertise of its personnel and of relevant agencies through training programmes including industrial attachments and the use of computerised expert system.

B. The Final Approving Authorities (e.g. State and Local Authorities) to observe:

- o EIA approval as one of the main criteria for project approval; and
- o Appointment of DOE Representative in the various state or local planning committees.

The above recommendations were endorsed by the Cabinet on December 9, 1992.

EQC Sub-Committee on EIA

In 1992, a sub-committee under the EQC was set up to review the procedure and the requirements of the EIA in Malaysia and to recommend practical lines of action that would be required for its effective implementation. A report on the review, produced in October 1992 and containing 33 proposals, was presented to the Ministry of

Science, Technology and the Environment, including proposals on the setting up of an independent review board as an alternative review process and stiffer penalties for non-compliance.

Briefings by Project Proponents

To facilitate the EIA reviewing process, the Department encourages briefings by project proponents and their consultants. A total of 16 briefings were held, mainly for resorts, recreational and industrial development projects with representatives of the Drainage and Irrigation Department, Forestry Department, Public Works Department, Wildlife and National Parks Department in attendance, together with professionals/experts in the relevant field.

Progress in the Implementation of the Recommendations on EIA Procedure

Early steps were undertaken by the Department to improve its current procedure. As a result, the average time of approval per report has been reduced by 40 per cent, thus increasing staff productivity and quality of services, despite the fact that the number of reports to be reviewed by the Department has increased by 11 per cent, and the number of staff remained the same.

AWARENESS OF EIA

The Department recognises the need to enhance awareness of EIA among the relevant parties in order to achieve the objectives of sound and sustainable development. In 1992, a total of 15 presentations which include lectures, briefings and seminars on EIA were given. In addition, the Department briefed the State Governments of Perak, Selangor, Johor and Kedah about the progress of EIA implementation. Throughout the year, several committees at different levels were also briefed on the same matter. Concurrently, the Department continued to participate in a number of training programmes in an effort to upgrade the skills and expertise of its personnel.

ENVIRONMENTAL INPUT TO DEVELOPMENT PLANNING

In 1992 the Department provided environmental input to a total of 39 development and natural resources development projects, an increase of 30 per cent over the previous year. These projects include development plans, master plans, structure plans, management plans, coastal protection works, sewerage, flood mitigation, sustainable development projects and natural resources studies on forestry, tourism, water resource and conservation, as shown in Figure 32.

Master/Structure/Development/Management Plan

In its input-to-development capacity, the DOE reviewed studies on Coastal Villages Environmental Improvement Project, Cameron Highlands Impact Studies, Solid Waste Management, Sungai Buloh Botanical Park, Malaysia Technology Park and Environmental Management Study at Sungai Sintok and Sungai Badak, Kedah Darul Aman.

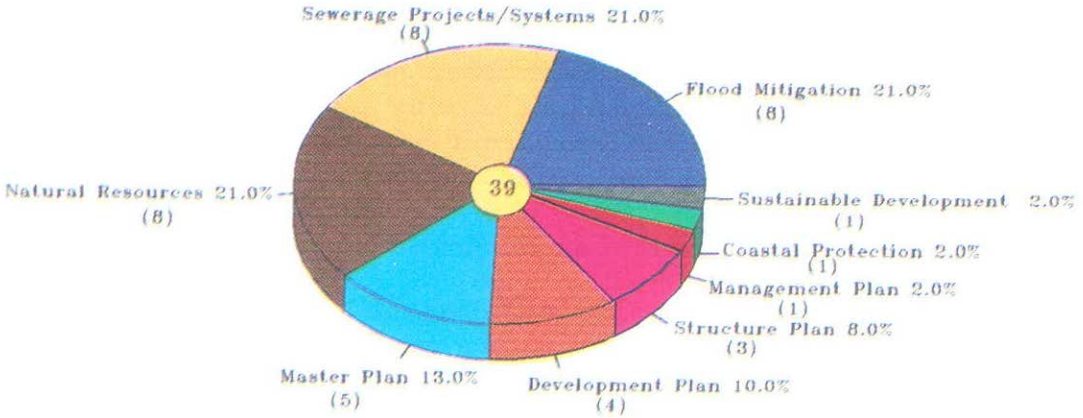


Figure 32. Department of Environment: Environmental Input to Project Development Planning, 1992.

Inputs were also provided for studies on infrastructure projects such as sewerage works in Alor Setar, Melaka, Seremban and Langkawi as well as flood mitigation measures for the areas of Sungai Kelantan, Sungai Klang, Sungai Kinta, Sungai Petani, Teluk Intan, Rantau Panjang and Maharani Town. Taking into account both the natural and built environment of the local planning authority area under study, input was provided for three structure plans prepared for the areas of Kulim, Port Dickson, Kuala Langat and part of Sepang.

Natural Resources

In 1992, the Department contributed towards studies on water resources especially for Pahang, Langkawi and Sabah. An inter-agency planning group (IAPG) was established by the Prime Minister's Department in 1991 to formulate a sector policy for the coastal resources management. Subsequently, three technical working groups were formed to cover the various technical aspects required for the preparation of a National Coastal Resources Management Policy. The Department contributed to a chapter on environment to each of these working groups. With regard to coastal protection works, the Department continued to provide input to the feasibility study and detailed design for areas in Pengkalan Datu - Kuala Besar in Kelantan, Kampung Buntal in Sarawak and Tanjung Aru -Sungai Kinarut in Sabah.

A study on National Conservation Strategy undertaken by the Economic Planning Unit and involving the Department was completed in 1992. The aim of the study is to set out plans and recommendations to integrate existing efforts towards natural resource management for conservation and development; to strengthen existing institutions and mechanisms; and to incorporate additional efforts into the process of conservation as a key to successful development.

As part of the activities carried out in connection with the UNEP - funded project on "Planning for Environmentally Sound Development (ESD) in Malaysia", a National Workshop on ESD in Malaysia was organized. The two-day workshop was held on October 22-23, 1992 at University Malaya, in conjunction with the Malaysia Environment Week, October 21-28, 1992. The workshop focussed on areas of concern including legal framework and public participation aspects in ESD.

In order to assist in giving environmental input to development planning, a database was established on environmentally sensitive areas such as forest reserves, archeological sites, water supply intake points and major fishing grounds.

Project Presiting Evaluation

This form of evaluation ensures adequate attention is given to those projects not subjected to EIA requirement and yet would deserve an environmental assessment before approval. The presiting evaluation sees that a potential operator has taken appropriate measures to control and abate pollution at the planning stage of the project.

State Offices of the Department play a major role here by conducting site investigations and forwarding views and recommendations to the relevant planning authorities, referring only problematic cases to the Headquarters for final decision. Depending on site suitability, environmental control requirements are submitted to authorities at state or local level prior to a final decision being made on the application. In 1992, a total of 4,414 applications for Presiting Evaluation were received by the Department, Figure 33 showing an increase of 25 per cent over the preceding year. Selangor received the most number of cases, followed by Perak and Pahang. About 70 per cent of the cases received were processed in 1992.

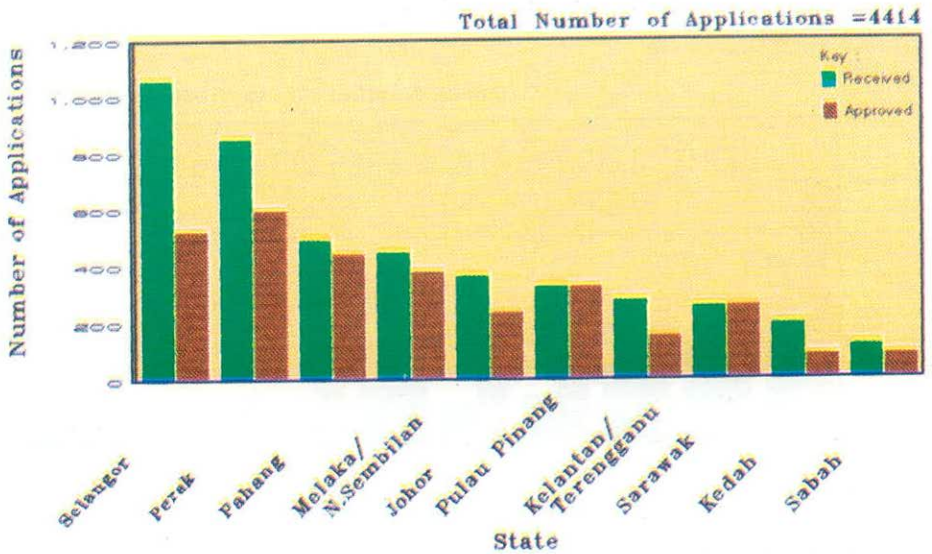


Figure 33. Malaysia : Application for Presiting Evaluation of Development Projects by State, 1992.

Approval of Equipment/Facility

To meet emission and effluent discharge standards stipulated under the relevant Regulations of the EQA 1974, approval is sought from the Director-General of Environmental Quality prior to construction of any facility likely to release pollutants. A total of 699 applications for water pollution control installations were received by the State Offices, showing an increase of 38 per cent over the preceding year. Out of these, 489 cases were approved. Johor received the most number of applications followed by Selangor and Sarawak as shown in Figure 34. For air pollution control equipment, and the installation of fuel burning equipment a total number of 670 applications, an increase of 33 per cent over the preceeding year, were received, with Selangor receiving the most number of applications, as shown in Figure 35.

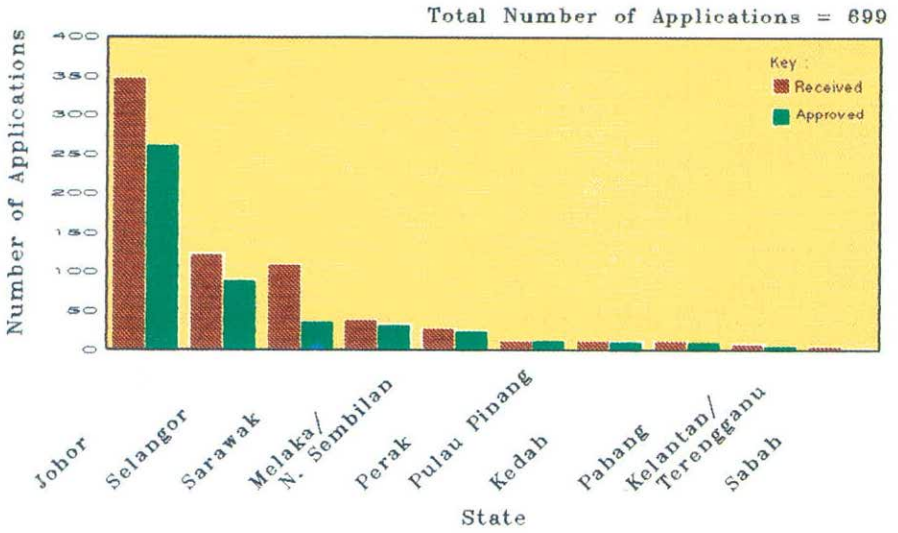


Figure 34. Malaysia: Application of Written Permission for Construction of Effluent Treatment System by State, 1992.

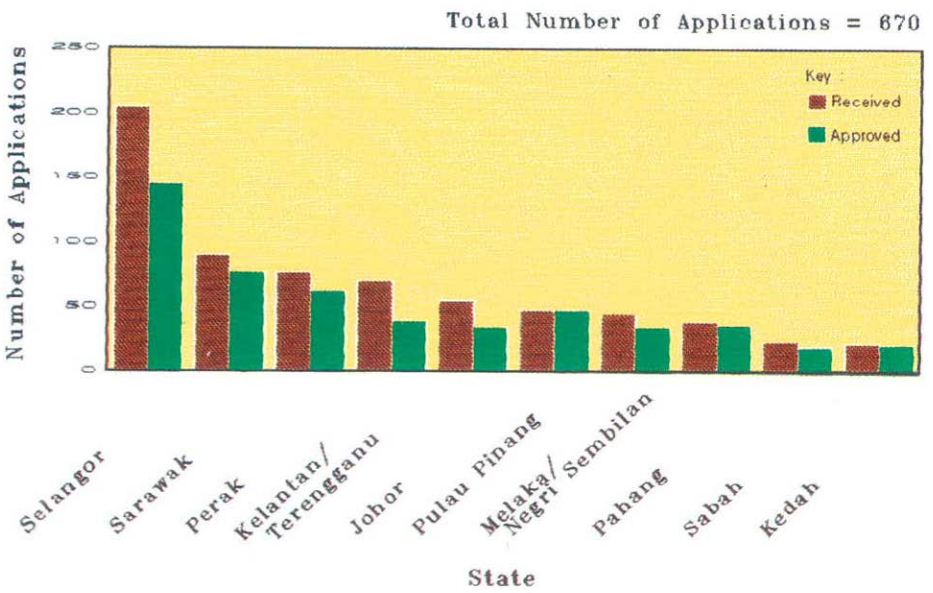


Figure 35. Malaysia: Application for Installation of Fuel Burning Equipment by State, 1992.

Establishment of a Geographical Information System

In mid-1992, the Department installed an ARC/INFO Geographical Information System (GIS) for the development of a natural resources information database to facilitate resource planning and management, as well as environmental improvement projects. The GIS comprises a Unix-based workstation (HP Series 700 Model 240) and two DOS-based HP Vectra 486/33 MHz micro-computer (HP 9000 Series 825s) via the local area network (LAN). The system is equipped with two large format digitizers for data input by manual digitizing.

Additional hardware and software were purchased under the 1992 development budget to expedite the GIS development. This includes an A0 size scanner with a raster-to-vector conversion software (CADCORE/Tracer) to speed up the digital database creation, Global Positioning System (GPS) to help in mapping the locations of factories and any other points/areas of interest, re-writable optical disk drive with media having capacity of 650 MB (325 MB/side) permitting mass data storage and a 2.0 GB DDS-DAT data backup system.

The GIS is now fully operational and efforts are being concentrated on database design and development.

ADVISORY SERVICES CENTRE AT MIDA

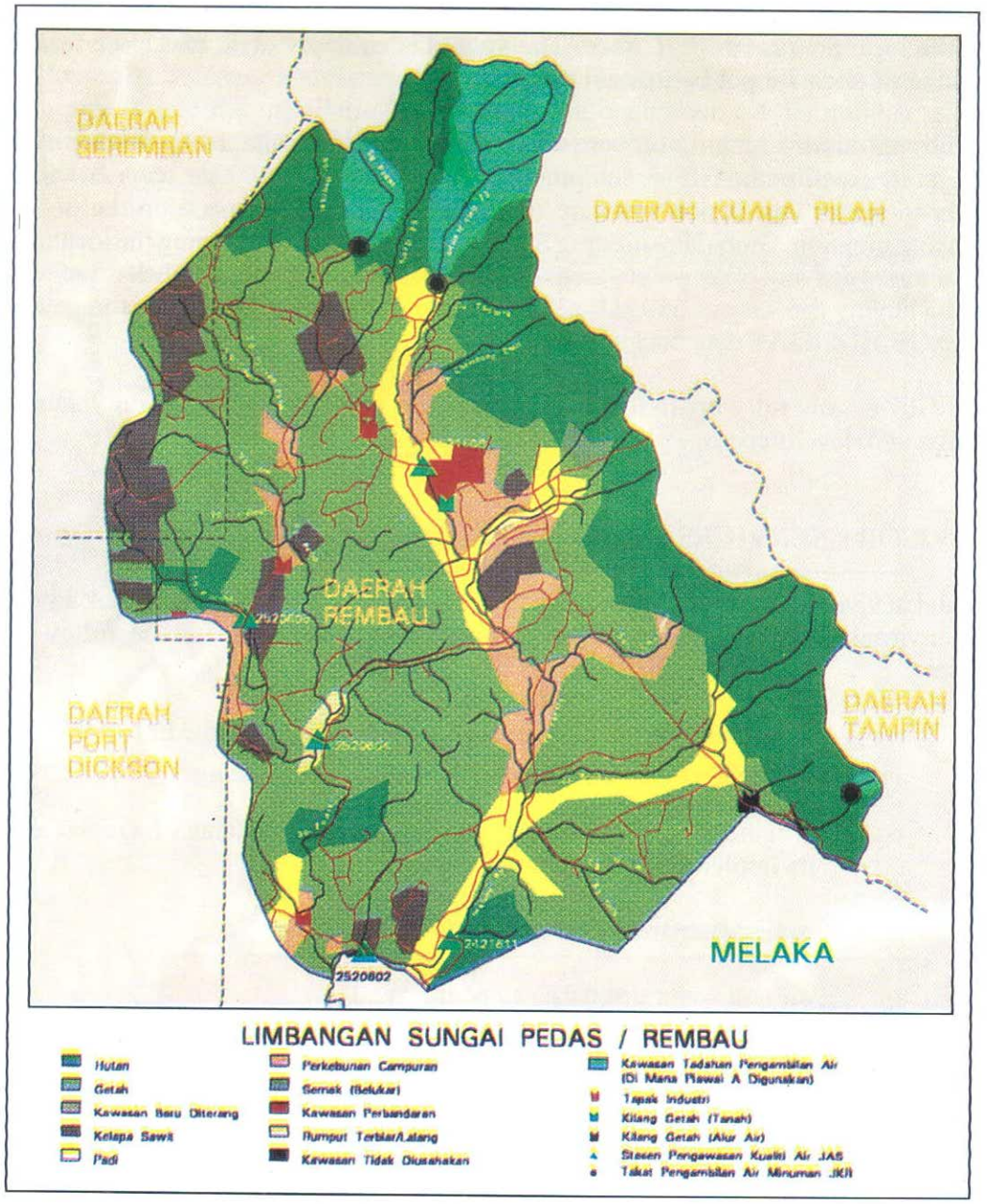
A total of 93 investors, both local and foreign visited the Centre in 1992 to seek advice on environment-related matters, most questions concerned with the following issues:-

- approvals, licences and compliances pertaining to the EQA 1974 and Regulations thereunder;
- whether a proposed project requires preparation of an EIA report, and its implementation approaches;
- toxic waste treatment and disposal facilities;
- air and water discharge standards; and
- guidelines for siting and zoning of a proposed project.

Based on common questions asked, a booklet on 'Environmental Requirements: A Guide to Investors' was prepared by the DOE for the use of, primarily, investors or project proponents and their consultants. The booklet provides information on the relevant legislation and describes procedures for obtaining appropriate approvals from the DOE. Further to that, information on environmental requirements has also been disseminated to 23 groups of foreign investment missions that visited MIDA on industrial promotion programmes.

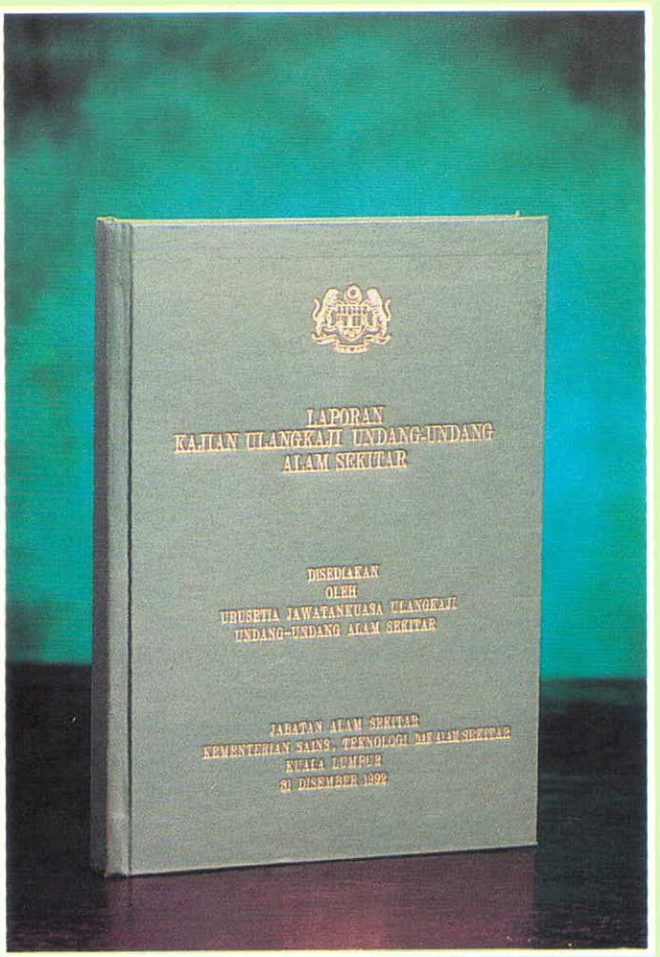
In its capacity to assess industrial project proposals with MIDA under the Industrial Coordination Act 1975, the Centre received through the year, 64 industrial projects, namely of the chemical, petrochemical, iron and steel industry, resort and recreational categories for comments before consideration by MIDA. Of the said figure, 37

projects were subject to the EIA Order and require preparation and approvals of EIA reports before the manufacturing licence is issued. The rest were found to be subject to other regulations under the EQA 1974, which require prior approvals from the DOE before project implementation.



An Output of the Department's GIS

PROGRAMME DEVELOPMENT



LAW REVIEW

The four Working Groups set up according to the main segments of the environment namely, air, water, land and the marine environment completed their review of the environmental laws early 1992. The reports which summarised existing and emerging environmental issues and the proposed amendments, were tabled to the Environmental Law Review Committee in May 1992. Subsequently, four Expert Drafting Groups were formed to propose draft amendments to the existing provisions based on the Working Groups' findings. The drafting exercise focussed on environmental issues that were readily accommodated under the Environmental Quality Act, 1974 and its Regulations and was expected to result in a Report to the Minister early the next year.

Among the issues examined by the Drafting Groups are:

- Constitutional right to clean environment;
- Environmental impact assessment;
- Environmentally sound technologies;
- Compensation for pollution damages;
- Public health, safety and emergency situations;
- Sewage;
- Animal wastes;
- Industrial effluents, including from agro-based sources;
- Air emission;
- Ozone depleting substances and hazardous substances; and
- Resource recovery

In addition to the major environmental law review activity, the Department submitted draft regulations to control emissions from engines using diesel and petrol to the Attorney General's office for finalisation.

MANAGEMENT OF CHEMICALS

Implementation of the Montreal Protocol

Committed to contribute towards the protection of the ozone layer under the Montreal Protocol, Malaysia is given a ten-year grace period before it is required to initiate action to reduce the consumption of the Ozone Depleting Substances (ODS). Consequently, the Government together with the various relevant Industrial Groups prepared a national strategy on overall expected ODS reduction programme till the year 2000. Figure 36 shows ODS consumption rate of the country from 1985.

Malaysia's Country Programme (CP) to reduce and eliminate the consumption and emission of ODS was approved by the Executive Committee (EXCOM) of the Interim Multilateral Funding (IMF), together with two ODS phase-out projects namely, "The conservation, leakage control and recycling of CFC-12 and demonstration project in the automobile air conditioning sector" and "The servicing, maintenance and recovery charging kit for portable extinguisher (Halon-1211) and training project in halon sectors". The approved combined budget for the two projects, expected to be completed by end of 1994, amounts to US$1.63 million. Malaysia is also in the process of reviewing

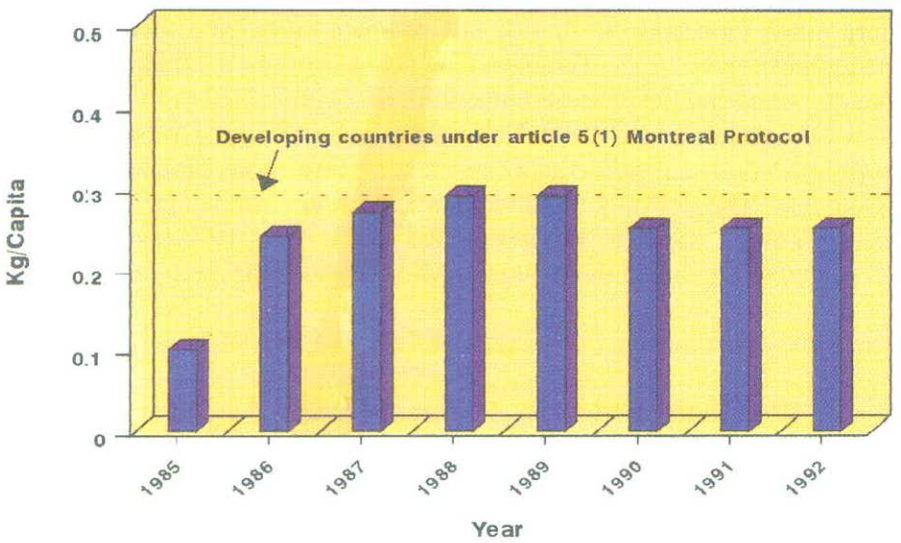


Figure 36. Malaysia: Trend of ODS Consumption per Capita, 1985-1992

phase-out projects relating to foam, aerosol, solvent, and refrigerant, as well as institutional strengthening for consideration of the EXCOM.

Through the year Malaysia participated in 9 international meetings related to the Montreal Protocol and the IMF, and had partaken in 9 workshops/seminars, concerning CFC control locally and abroad.

Thus far, the following preliminary ODS phase-out projects have been prepared:

- Institutional Strengthening (IS) in Relation to the Projects on Reduction of ODS;
- Jumayu Industries Replacement of ODS by Liquefied Petroleum Gas (Butane);
- Reduction of the Consumption of ODS in Commercial and Residential Refrigeration;
- Kontrak Manufacturing Service: Conversion Cost for Reduction of CFCs in Aerosols; and
- Reduction of the Consumption of ODS in the Small-Medium Industries (SMI) Solvent sector.

Control of Chemicals other than ODS

As the Designated National Authority (DNA) for the International Register of Potentially Toxic Chemicals (IRPTC) and The Prior Informed Consent (PIC), the DOE coordinates the implementation of the London Guidelines for the exchange of Information on Banned and Severely Restricted Chemicals in International Trade. Through its Technical Committee for Chemicals Not Otherwise Controlled, the following draft regulations and guidelines were prepared:

- Interim Guidelines for the Transportation of Dangerous Goods (Chemicals Not Otherwise Controlled), 1993 - Second Draft;

- Model National Legislation for the Implementation of London Guidelines (Amended 1989), and PIC Procedure, 1992 - Preliminary Draft;

- Chemical Act (Substances Not Otherwise Controlled), 199_ - Preliminary Draft.

In addition, 29 notifications on the export of chemicals restricted in the country of origin were received, under the International Programme for Chemical Safety (IPCS), of which DOE is the national correspondent. The list thus obtained is being added to the DOE list of industrial chemicals being compiled for the purpose of preparing the regulations and guidelines mentioned above. Activities involving DOE in overall management of chemicals in 1992 include 6 meetings/workshops focussing on chemical safety and management, plus 3 consultancy services on educational material, chemical safety legislation and training materials or environmental risk assessment and control technology.

ENVIRONMENTAL RESEARCH AND DEVELOPMENT

To support the existing programmes for pollution control as well as to strengthen enforcement through the application of project outcome and latest know-how, projects implemented in 1992 are as follows:

Formulation of Water Quality Criteria and Standards

Phase III

The objective of this project was to review the existing discharge standards so as to complement the Interim National Water Quality Standards formulated during phase I, thus improving, modifying and strengthening the provisions of the Environmental Quality (Sewage and Industrial Effluents) Regulations 1979. This study is undertaken by Syed Muhammad, Hooi and Binnie Sdn. Bhd. and due to be completed in early 1993.

Phase IV

Following up on phase II, this phase aims to classify more major rivers according to their beneficial uses and is being undertaken by a collaboration of 5 local universities led by Institute of Advanced Studies (IPT), University of Malaya (UM), and due for completion in early 1993 also.

Reduction of Waste at Source for Photographic Shops, Tanning Industries and Automotive Service Stations

An on-going project undertaken by IPT, UM and due for completion before 1993, this project intends to come out with practical recommendations/methodologies to minimise wastes generated by these activities.

Study on Toxic and Hazardous Wastes Disposal Sites

The objectives of this project, due for completion in 1994, undertaken by the Consultancy and Research Unit of Universiti Teknologi Malaysia are to identify and investigate potential sites as preparation for toxic and hazardous wastes disposal sites master plan in Peninsular Malaysia; and to carry out a detailed geological and hydrogeological study on two selected sites.

Development of an Oil Spill Model

This study, undertaken by IPT, UM and which commenced in August 1992, is due for completion in May 1993 and is expected to complement the implementation of the National Oil Spill Contingency Plan for Malaysian waters.

In addition to the above projects, the Department has also contracted out research studies on Social Impacts of Noise Pollution to Population Residing in the Vicinity of Noise Sources, Chemicals Registration and Assessment Scheme and Socio-Economic Study of Coastal Areas Threatened by Oil Spills.

INVENTORY OF POLLUTING SOURCES

The collection and gathering of information on the sources of pollution continued in 1992 to update the database for air and water pollution sources. Detailed source investigation was carried out through inspection visits and detailed questionnaires.

Air Pollution Sources

The Department's 1992 emission inventory comprised stationary, mobile and solid waste disposal sources, summarised in Figures 37 to 39, with the latter indicating load distribution. Fuel combustion sources form the majority of stationary air pollution sources, numbering 3,033 out of 8,054, followed by wood-based products (1,761) and food and agriculture. Motor vehicles which constitute the mobile sources of air pollution are the most significant in number totalling 5,539,469, while there are 57 potential sources from solid wastes disposal. As in the previous year, the highest distribution of mobile sources in 1992 is in Selangor, followed by Johor and Perak with the lowest in Perlis, while the distribution of stationary sources shows the majority being in Selangor, followed by Johor and Pulau Pinang. Perlis again, registered the lowest number.

Water Pollution Sources

A total of 2,480 industries were identified as significant water pollution sources in Malaysia in 1992. Of the total number of sources, the food and beverage industries contributed 1,013 at 40.8 per cent, followed by the rubber product industries with 339 sources and the chemical industries with 314 sources. Figure 40 shows the distribution of significant water pollution sources by state, while Figure 41 reinforces the findings of the Department's monitoring which pinpoint sewage and animal wastes as the biggest contributors of pollution load. The state of Selangor had the biggest number of sources at 500, followed by Johor with 364, Pulau Pinang with 318 and the Federal Territory of Kuala Lumpur with 223.

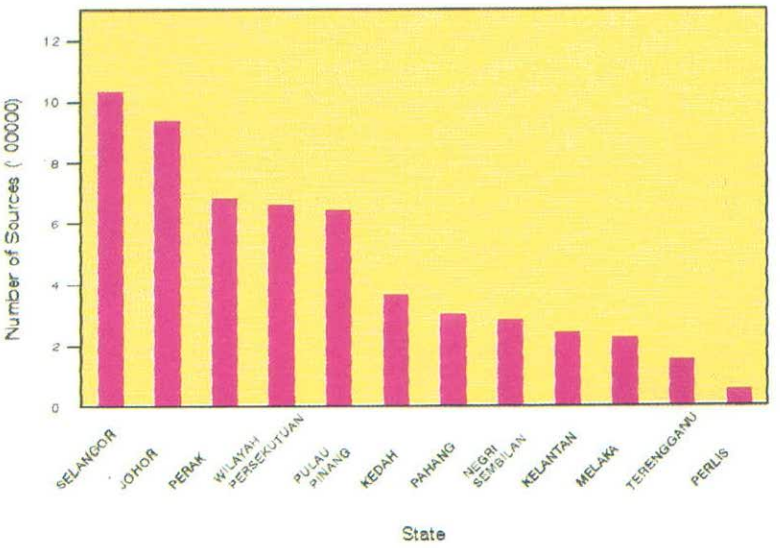


Figure 37. Peninsular Malaysia: Number of Significant Mobile Sources by State as at 31st October, 1992

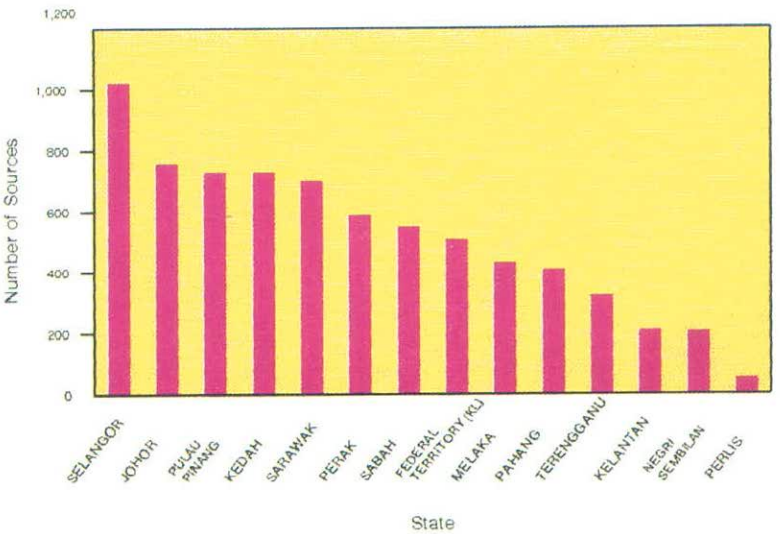


Figure 38. Malaysia: Number of Significant Stationary Air Pollution Sources by State, 1992

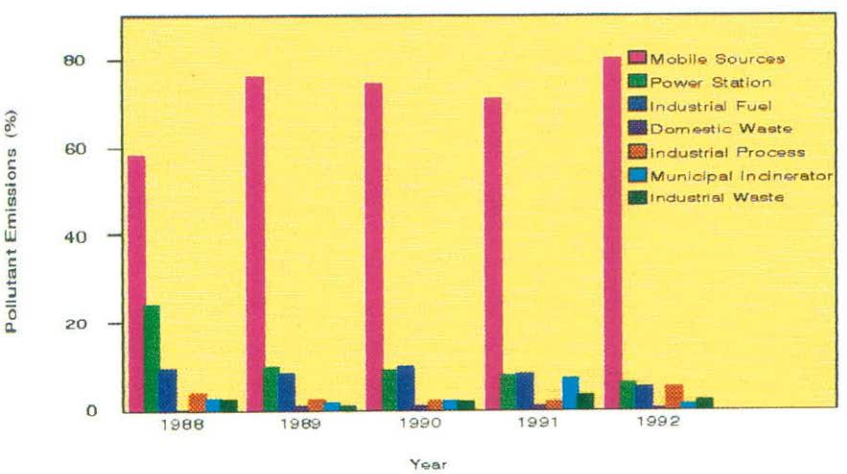


Figure 39. Malaysia: Trend of Pollutant Emission to the Atmosphere from Various Sources, 1988-1992

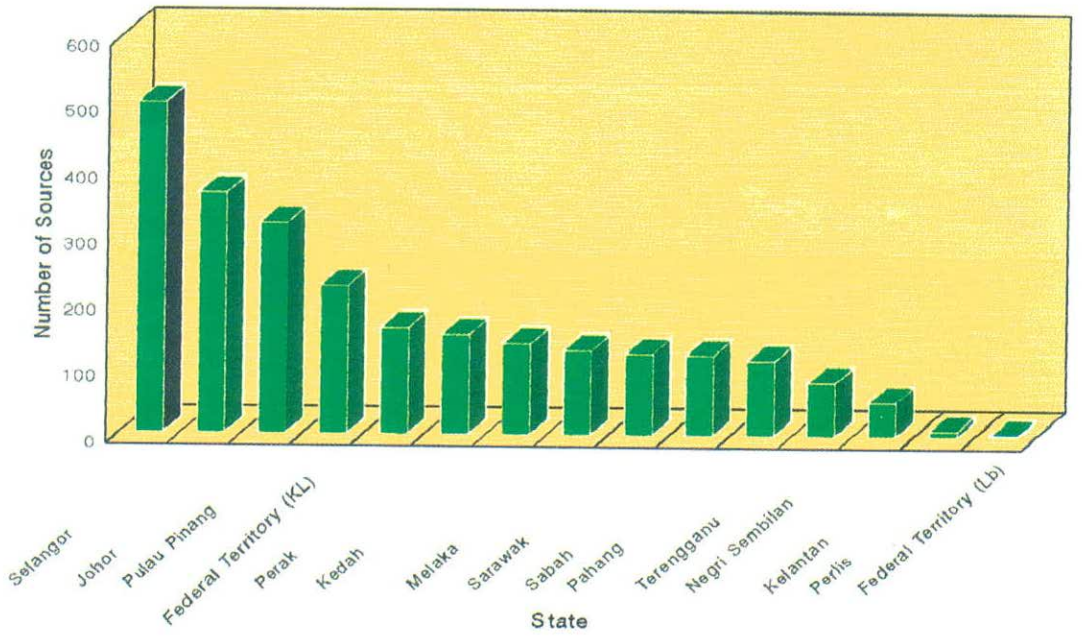


Figure 40. Malaysia: Distribution of Major Industrial Sources of Water Pollution, 1992

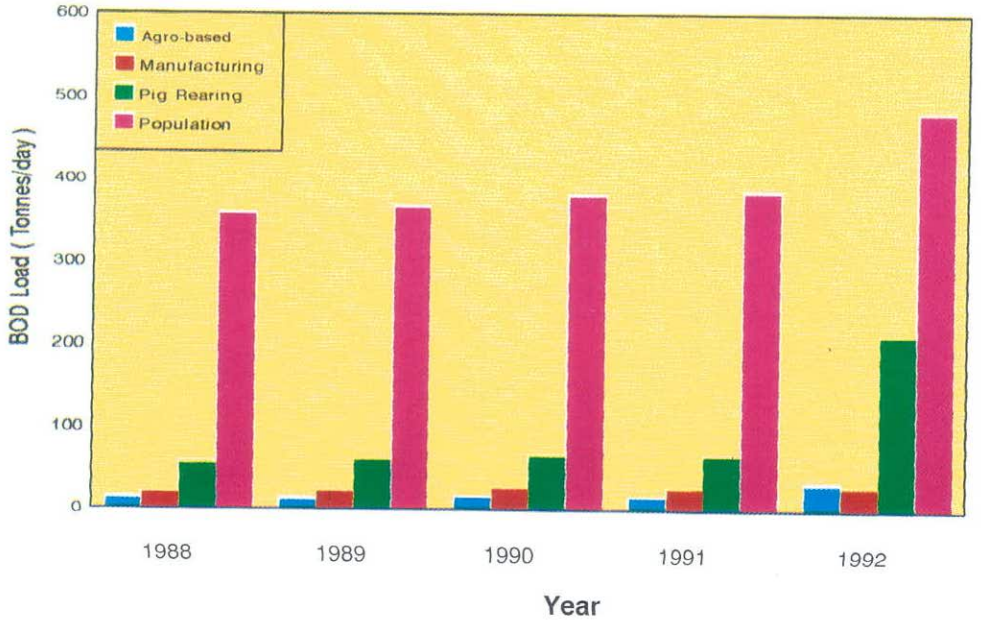
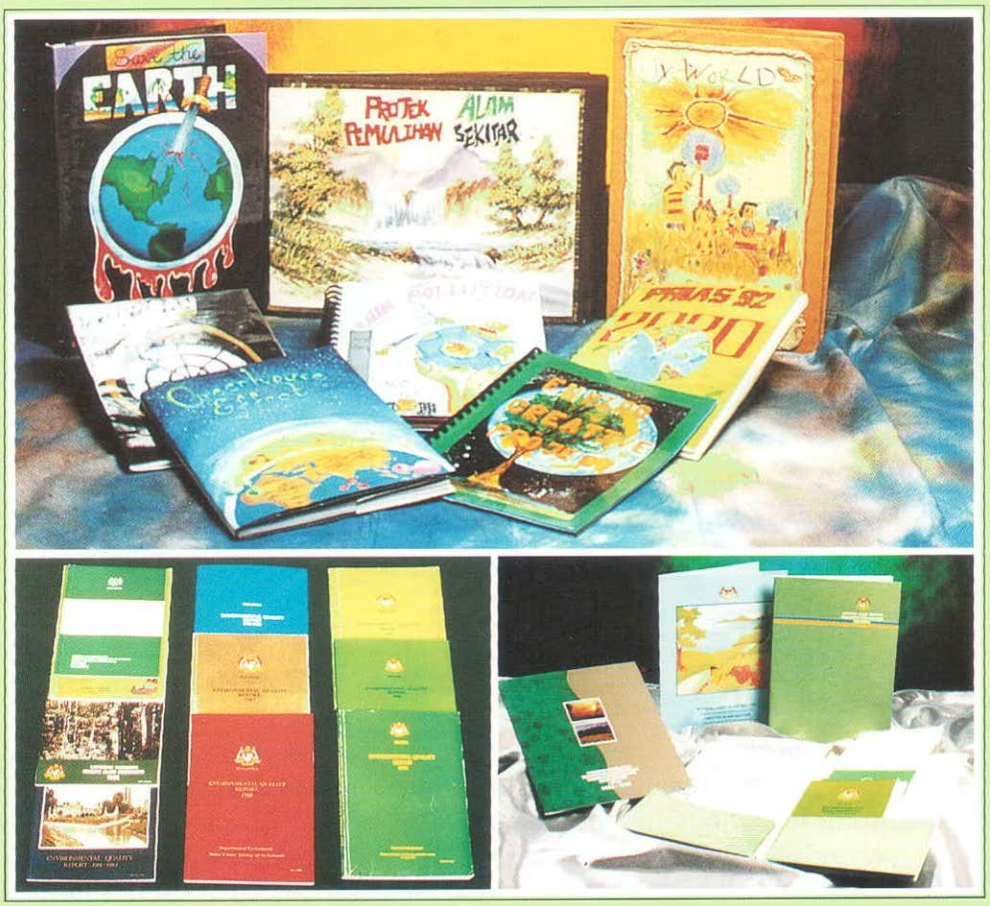


Figure 41. Malaysia: Organic Load Discharged According to Sector, 1988-1992

ENVIRONMENTAL EDUCATION AND INFORMATION



PUBLICATIONS

In 1992, a total of 2,880 environmental publications comprising the Environmental Quality Report, SEKITAR, Berita EIA, booklets and pamphlets were distributed to various target groups, including individuals, government agencies, universities, libraries, non-governmental organisations (NGOs), the press and also overseas. Figure 42 shows that the biggest number of publications were distributed to Government agencies followed by foreign entities and individuals. The latest addition to the Department's Information Kit is the fourth edition of the Environmental Requirements: A Guide To Investors which was published in July 1992 and proved to be a useful guide to local and foreign investors in Malaysia. To date, the Department's mailing list has grown by 15 per cent to 1,400 compared to 1,216 the previous year.

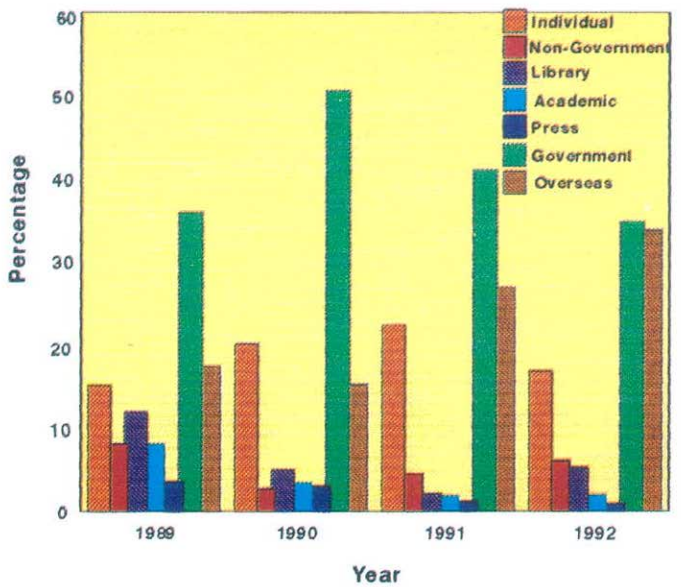


Figure 42. Department of Environment: Dissemination of Environment Publications, 1989-1992

QUERY-RESPONSE SERVICES

One of the primary roles of the Information Unit is responding to queries by delivering the most pertinent information on any given environmental subject to the enquirer as quickly as possible. A total of 2,742 queries for environmental information were received in 1992, which shows about 20 per cent increase from the previous year. The highest percentage of queries came through the usage of the Department's library, followed by requests through letters and INFOTERRA services. From Figure 43, it is clearly seen that the Department's library has been the most popular source of information queries, while the use of the other two channels have been declining through the years.

Requests for information were received from various groups, of which students were found to be the major users of the Department's library and also the major enquirers. The speed of response will depend on the urgency of the information required. A

comprehensive analysis of the category of information users is given in Figure 44, showing that students using the library, and overseas queries logging onto INFOTERRA rate very highly in the correlation between users to information resources.

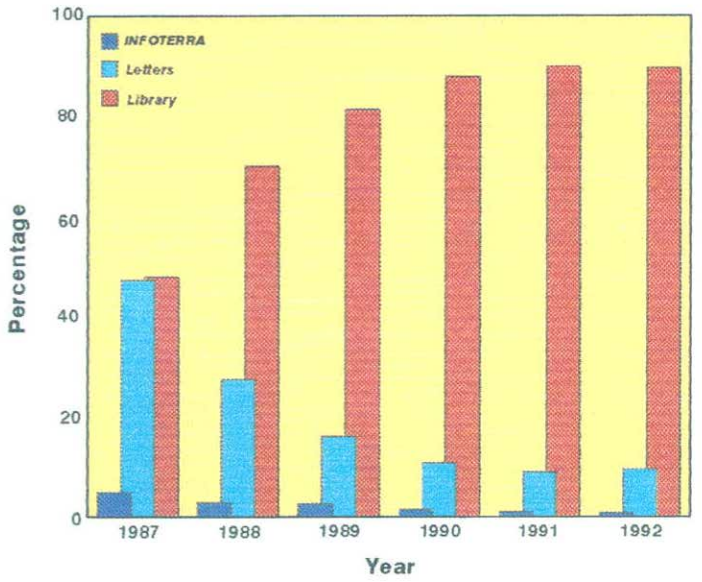


Figure 43. Department of Environment: Channels of Query Responses, 1987-1992

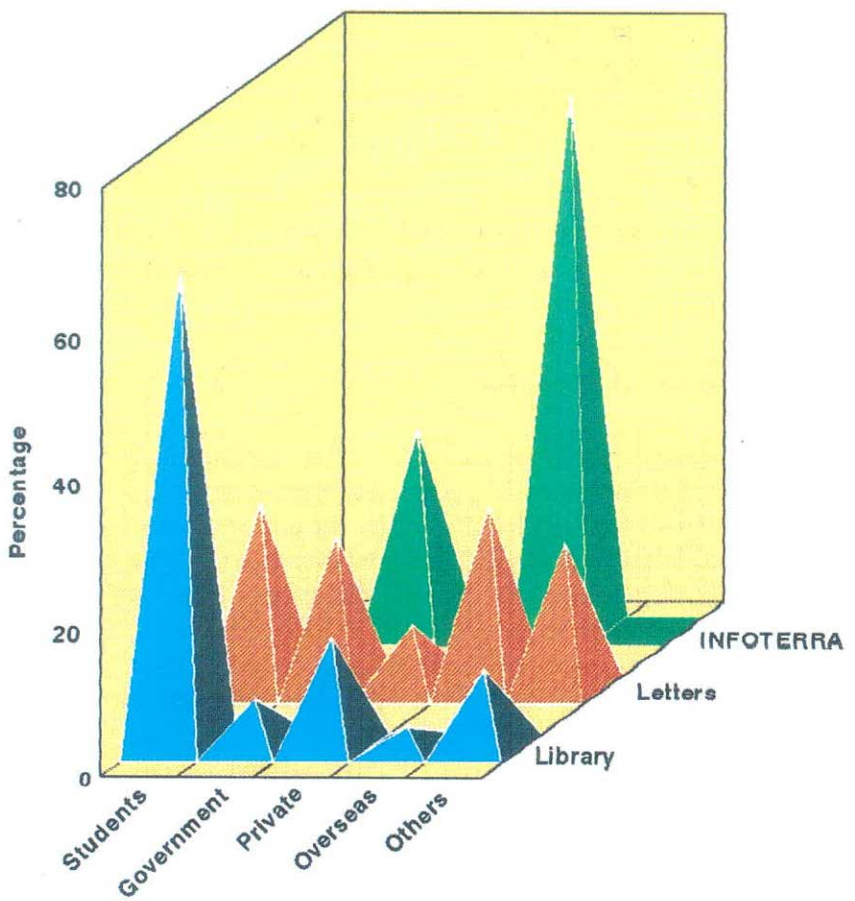


Figure 44. Department of Environment: Category of Information Users, 1992

ENVIRO-LIBRARY SERVICES

Information sources available within the library comprise more than 15,560 books and reports; 448 titles of magazines, journals and brochures; and 42 categories of newspaper cuttings. The number of newspaper cuttings related to the subject of environment has increased exponentially since 1977 as shown in Figure 45. Figure 46 shows the rapid increase in the number of outside users of DOE's library since 1983. This clearly indicates the increasing awareness on the subject of environment.

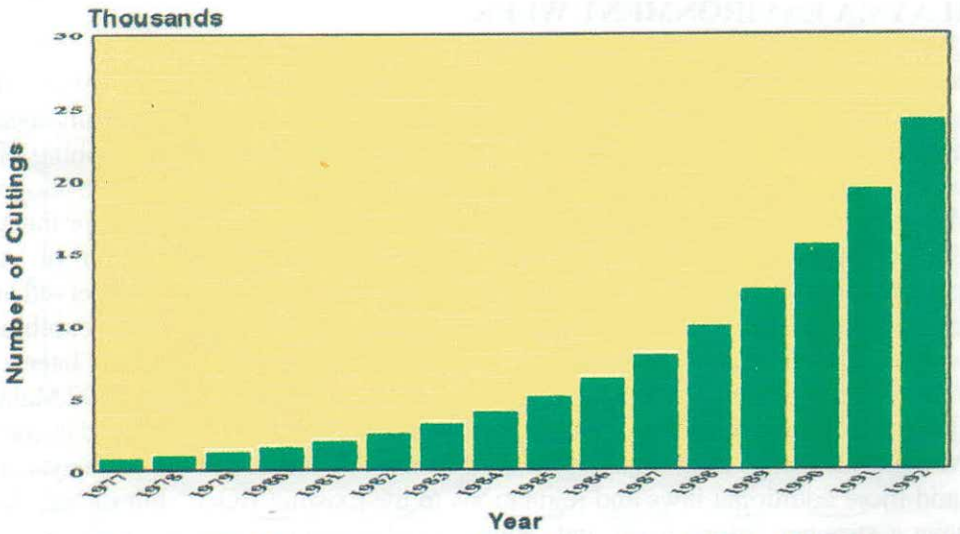


Figure 45. Department of Environment: Total Number of Newspaper Cuttings Compiled, 1977-1992

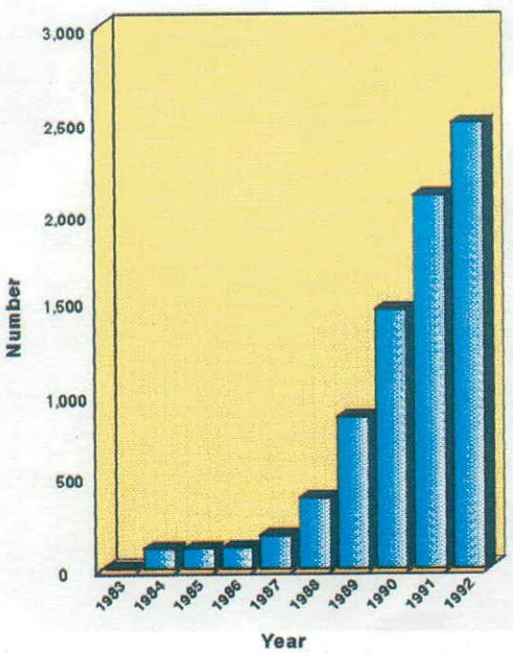


Figure 46. Department of Environment: Users of Library, 1983 - 1992

INFOTERRA

The core activity of INFOTERRA National Focal Points (NFP) is responding to queries. As the NFP for Malaysia, the DOE received and processed a total of 22 queries through the INFOTERRA Network. Out of these, 16 (73 per cent) were from overseas while the other 6(27 per cent) were from our local Government agencies. Overseas queries were received from Algeria, Botswana, Britain, China, France, Guyana, Kenya, Oman, Republic of Seychelles, Sri Lanka, Syria, Taiwan and Zimbabwe.

MALAYSIA ENVIRONMENT WEEK

Malaysia celebrated its second Environment Week beginning October 21, 1992. At the federal level, a number of programmes and activities were organised and amongst the highlights were The ENVIRO PRO'92 Conference and Exhibition, launching of the 'Greening of the World' campaign, workshop on Environmentally Sound Development in Malaysia, presentation of the Langkawi Award and Appreciation Night for the Mass Media. The theme for 1992 was 'A Nurtured Earth, A Prosperous Nation' or 'Alam Terpelihara, Rakyat Sejahtera'. Malaysia Environment Week was also observed at the state level between October and December, activities ranging from seminars, exhibitions, drawing competitions and tree-planting. An inter-varsity debate organised later in the year from December 28 to 31 1992 was regarded as the 'grand finale' of the 1992 Malaysia Environment Week celebration. The International Islamic University walked away with a RM3,000 cash and a challenge trophy after convincing the judges that "Malaysia need not add more additional laws and regulations to the existing EQA", but rather, should "...have a stronger enforcement unit, educate and promote environmental awareness amongst the public". The Universiti Kebangsaan Malaysia as runner up, received a reward of RM 2,000.

Tree-planting ceremony at Taman Tasik Titiwangsa during the launching of Malaysia Environment Week.

ENVIRONMENTAL LECTURES

The number of environmental talks and lectures conducted by the officers from Headquarters and the State Offices show a marked increase over previous years, numbering 205 lectures in 1992 compared to 61 in 1991 and 34 in 1990. The subject of Environmental Education and Awareness was highest in demand, with a total number of 94 lectures as shown in Figure 47.

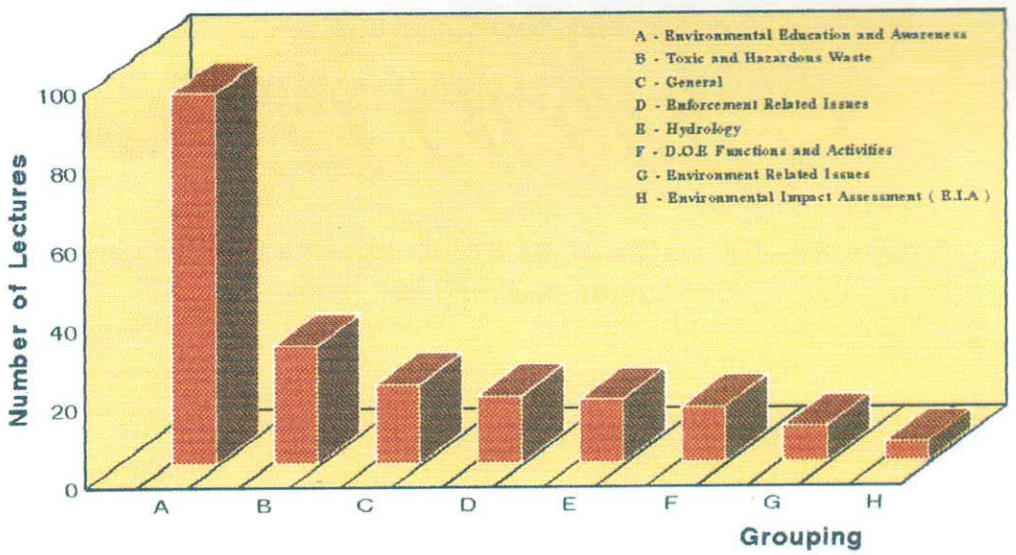


Figure 47. Department of Environment: Lectures Conducted by Subject, 1992

OTHER EDUCATIONAL ACTIVITIES

The Department organised and/or participated in a total of 72 exhibitions throughout the year, covering all states as shown in Figure 48. Pulau Pinang, again, emerged as the most active State Office conducting environmental exhibitions. Besides taking part in exhibitions, the Environmental Education Resource Centre in DOE also provides videos, slides and posters for interested institutions and agencies to conduct their own exhibitions, research work, publications, etc. Figure 49 shows the number of exhibition materials borrowed from the Resource Centre.

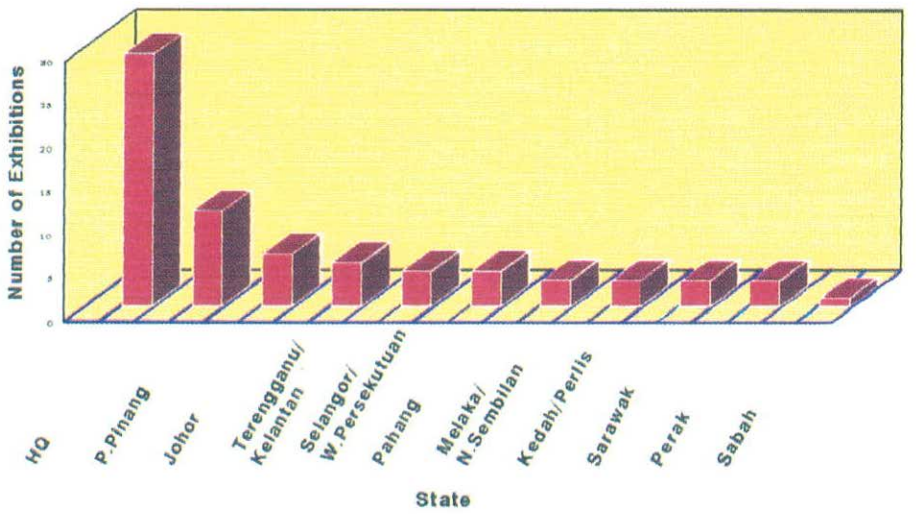


Figure 48. Department of Environment: Exhibitions Conducted Nation-Wide, 1992

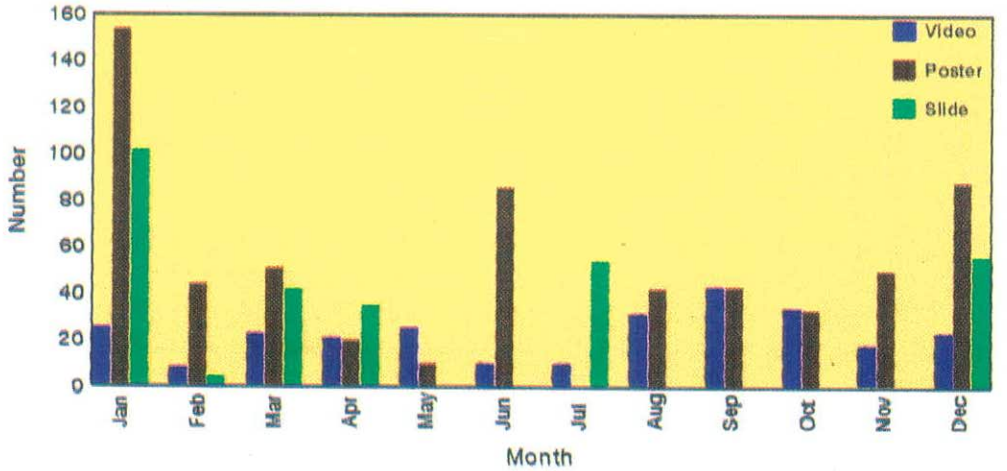


Figure 49. Department of Environment: Audio-Visual Aids Borrowed from the Environmental Education Unit, 1992

ENVIRONMENTAL AFFAIRS

NATIONAL COOPERATION

Federal-State Relations

Cooperation between Federal and State Governments continued through the regular meetings of Ministers and State Exco members responsible for environmental matters (MEXCOE) chaired by the Honourable Minister of Science, Technology and the Environment. Issues consistently raised and deliberated were EIA procedures, hazardous waste control, incentives for environment-friendly products and the then on-going environmental law review.

Malaysia Incorporated

On the public-private sector interface, the Business Council for Sustainable Development (BCSD) in Malaysia whose aim is to promote understanding of sustainable development and provide a business perspective on ways to progress towards this goal, set its activities in motion, beginning with a series of briefings at their monthly meetings by various speakers involved in environmental management. The annual dialogue of July 23, 1992 between the Minister and NGOs received enormous response judging from the turnout alone, while a special dialogue on May 7, 1992 involving petroleum companies and related agencies succeeded in resolving common issues in oil spill control.

BILATERAL COOPERATION AND ASSISTANCE

o Malaysia-Singapore

Cooperation between Malaysia and its nearest neighbour Singapore, continued with the Third and Fourth Meetings of the Malaysia- Singapore Joint Committee on the Environment (MSJCE), held from March 5-6, 1992 in Singapore and September 4-5, 1992 in Malaysia, respectively. Both meetings were co-chaired by the Chairman of Johor State Committee on Tourism and Environment and the Permanent Secretary of the Ministry of the Environment, Singapore. Issues discussed include the following:

(i) Control of motor vehicle emissions;

(ii) The Straits of Johor water quality;

(iii) Control of tanker cleansing and palm oil discharges into the Johor Straits and adjacent waters;

(iv) Management of hazardous chemicals; and

(v) The exchange of information and experience in phasing out of controlled substances under the Montreal Protocol.

o Malaysia-Indonesia

The Honourable Minister of Science, Technology and the Environment, Malaysia, led a visit to Indonesia on February 12-15, 1992 upon the invitation

of Professor Emil Salim, the Indonesian State Minister for Population and Environment. The two Ministers discussed global environment and development issues and agreed on setting up an Indonesia-Malaysia Joint Committee on the Environment (IMJCE).

o Malaysia-Thailand

The first meeting of Senior Officials on Malaysia-Thailand Cooperation in Science and Technology took place on February 20-27, 1992 and entailed discussion on areas of cooperation to include biotechnology, remote sensing and environment. This initiated moves towards forming a joint committee similar to MSJCE and IMJCE.

o Malaysia-Australia

On the invitation of the Australian Government, the Minister of Science, Technology and the Environment visited Australia from November 4-14, 1992. A discussion was held with the Minister of Arts, Sports and Territories as well as with the Minister of Industry, Technology and Commerce of the host country.

Areas of common interest discussed include the development of standards and methodology, meteorology, biotechnology, fire prevention and protection for forests, toxic and solid waste management, motor vehicle emission control, facilitating industrial raw material movements under the Basel Convention, climate change and global warming.

o Malaysia-United Kingdom

In the wake of the Nagasaki Spirit collision, the Government of United Kingdom kindly donated an oil spill control equipment namely, an Oil Recovery System to help Malaysia combat similar incidents in the future.

o Malaysia-Socialist Republic of Vietnam

A delegation from the Ministry of Science, Technology and the Environment, Malaysia paid a working visit to the Socialist Republic of Vietnam, on August 17-22, 1992.

Subsequently, a Memorandum of Agreement on Scientific, Technological and Environmental Cooperation between the Government of the Socialist Republic of Vietnam and the Government of Malaysia was drafted.

o Malaysia-Japan

Consultancy services by Mr. Terutaka Ishikawa in the management of air quality commenced on September 8, 1992 and will be due for completion by September 7, 1994.

o Other Bilateral Cooperation Programmes

Throughout the year visits of foreign delegations were the norm, taking place on an average of once a month, this frequency perceived as a positive sign for Malaysia's environmental image abroad. The Department received environmental missions from Canada, China, Denmark, Germany, Japan, Mauritius, Thailand and Vietnam while Malaysian missions led by the Minister of Science, Technology and the Environment visited Australia and Indonesia to discuss common areas of interest.

REGIONAL COOPERATION

o Economic and Social Commission for Asia and the Pacific (ESCAP)

The DOE has worked closely with the Economic Planning Unit, the National focal point for ESCAP, towards implementation of various activities and projects, including:-

(i) Project on Incorporation of Environment Considerations into Coastal Tourism Development Planning (Briefing by UNEP, July 23-25, 1992).

(ii) Project on the Development of Methodologies, Guidelines and Human Resources for Hazardous Waste Management in the Developing Countries in ESCAP Region (Consultative Meeting in Bangkok, January 11-15, 1992).

(iii) Project on Planning and Management of Environmental Technology in Asia and the Pacific.

o ASEAN Senior Officials on the Environment (ASOEN)

The Third Meeting of the ASEAN Senior Officials on the Environment was convened in Manila, Philippines, from January 30 to February 1, 1992, chaired by Mr. V. Danabalan, Secretary-General of MOSTE, Malaysia. During the meeting, ASOEN reviewed activities of the six working groups under it and formed two Ad-hoc working groups to deliberate on the ASEAN - US Environmental Improvement Project (EIP) and ASEAN common stand on UNCED issues, as well as prioritization of project proposals. Five of the six working groups established under ASOEN held their 2nd meetings through 1992.

o ASEAN Cooperative Programmes on Marine Science (ACPMS)

In 1992, the Department continued to provide the Chairmanship at national level besides being the secretariat of the National ASEAN Sub-Committee on Marine Science, responsible for the coordination of the two on-going cooperative programmes, as follows:

(i) *ASEAN-AUSTRALIA COOPERATIVE PROGRAMME ON MARINE SCIENCE*

Project I: Regional Ocean Dynamics (ROD)

The activity to date namely, collection of tides data is still continuing at 5 stations installed from the remaining funds available and will continue to the year 1995. Another activity of the project, i.e. 'ROD Extension/Current Metering Element' was included in phase I, whereby an oceanographic cruise of the South China Sea commenced in April 1992 to study the movement of seawater in this region.

Project II: Coastal Living Resources, Phase II

Phase II of the project which started in July 1989, with an aim to train ASEAN and Australian resource managers in managing coastal ecosystems, continued in its third year of implementation.

(ii) *ASEAN-CANADA COOPERATIVE PROGRAMME ON MARINE SCIENCE PHASE II*

The 5-year project is now in its second phase, with a goal to optimise the management and development of coastal resources while formulating criteria for the marine environment, so as to provide environment protection and socio-economic upliftment of the people in ASEAN. The studies carried out under the project are divided into three components namely, Environmental Criteria, Pollution Monitoring and Baseline, and Red Tide.

o ASEAN-EC

An ASEAN-EC Seminar on Toxic and Hazardous Waste Management Policies was held in Kuala Lumpur on June 23-26, 1992, attended by representatives of ASEAN countries. New project proposals under ASEAN-EC are as follows:

(i) ASEAN-EC Cooperation in Marine Science: Monitoring, Assessment and Effect of Marine Pollution in ASEAN Countries; and

(ii) Remote Sensing Improvement of Natural Resources Management and Environment Monitoring Through the Use of European Space Agencies ERS-1 Satellite Capabilities in ASEAN Countries.

Collectively, these studies revolved around identification of environmental quality target for the regional marine environment, agreement upon standardized methods for environmental quality monitoring baseline measurements, establishment of a regional 'red tide' surveillance and advisory network and training of ASEAN personnel.

o ASEAN-UNDP

On-going projects under the aegis of 'Anti Pollution Technologies for Urban and Rural Areas in the ASEAN Region' are: An Integrated Approach to Piggery Waste Pollution Control with Emphasis on Biogas Production, Pollution Control Management for Tapioca-Starch Wastewater; and Application of Water Hyacinth for Wastewater Treatment.

o ASEAN-US

The Environmental Improvement Project (EIP) estimated to cost US$17 million for a duration of 6 years, was formulated to assist ASEAN in mitigating urban industrial problems such as industrial pollution and hazardous waste management. In addition, a project on 'The Prevention and Management of Marine Pollution in East Asian Seas' has also been proposed for GEF funding.

MULTILATERAL COOPERATION

o Montreal Protocol

Malaysia as signatory to the Protocol participated in the Sixth Meeting of the Executive Committee Implementation (EXCOM) of the Interim Multilateral Fund (IMF) for the Implementation of the Montreal Protocol (MP) in Montreal, February 27-28, 1992, which approved its Country Programme and two ODS phase-out projects. As reported in an earlier chapter, other projects including institutional strengthening were being reviewed for consideration of the EXCOM. Judging by the frequency of international meetings related to the MP and IMF, cooperation in this area is in high gear.

o Basel Convention

Progress on the country implementation of the Basel Convention on the Control of Transboundary Movement of Hazardous Waste and their Disposal was reported in the 'Scheduled Waste Management' subchapter. Subsequent to in-country meetings throughout the year, Malaysia was represented by DOE at the First Meeting of the Conference of the Parties to the Basel Convention, held in Piriapolis, Uruguay from November 30 to December 4, 1992.

o Climate Change Convention

Malaysia has been participating all along in the Inter-Governmental Panel on Climate Change (IPCC) meetings, and as of 1992 is gearing towards the signing of the FCCC. In this connection, the country supports the initiative of UNEP in organising the INC/FCCC and operating an information clearing-house with a view to obtaining relevant information regarding climate change and appropriate technologies.

o Convention on Biological Diversity

Having signed the Biological Diversity Convention in Rio during June's Earth Summit, Malaysia recommends UNEP's assistance in establishing regional cooperation programmes in genetic protection and agreement based on shared benefits from biotechnology development from a common gene pool. To implement the Convention, Malaysia's post-Rio stand is to bring issues such as access to genetic and financial resources, intellectual property protection, scientific and policy research to the fore.

INTERNATIONAL COOPERATION

o United Nations Conference on Environment and Development (UNCED)

The Department actively participated in preparations towards the above conference through the UNCED Preparatory Committee meetings and continued to play an effective and leading role in contributing towards the formulation of Agenda 21, especially in areas relating to forest, atmosphere, toxic chemicals, toxic and dangerous products, hazardous wastes, coastal zone management, oceans and seas, freshwater resources, solid wastes and sewage-related issues. To this end, the Senior Officials Meeting on UNCED and Second Ministerial-level Conference on UNCED (SMCED) were held on April 22-26, 1992 and April 27-29, 1992 respectively in Kuala Lumpur, officiated by the Prime Minister of Malaysia, Dato' Seri Dr. Mahathir Mohamad.

The SMCED pooled participants of 52 developing countries, eleven observers from developed countries, eleven international agencies and nine international and local NGOs, coming up with the Kuala Lumpur Declaration which was to be used as a basis to formulate a common stand of the developing countries towards the negotiations in Rio.

The UNCED or 'Earth Summit' subsequently adopted the Rio Declaration on Environment and Development, a non-legally binding authoritative statement on forests and Agenda 21. The summit further endeavoured to establish an Inter-governmental Negotiating Committee (INC) for a proposed Convention on Desertification plus a Commission on Sustainable Development to follow up on UNCED decisions. In addition, the Framework Convention on Climate Change (FCCC) and Convention on Biological Diversity were opened for signature and signed by a large number of states, Malaysia being among those who signed the latter.

o United Nations Environment Programme (UNEP)

As the focal point of UNEP, DOE participated in the activities under 'Montreal Protocol' and IRPTC, reflected under the subchapter on 'Management of Chemicals' earlier. Other major activities associated with UNEP were:-

(i) The UNEP/JSWPR Project on 'Assessment and Promotion of Human Resources for River Water Quality Management', the First Steering Group Meeting being held on September 7-8, 1992, Japan; and

(ii) The National Workshop on 'Environmentally Sound Development' at University of Malaya on October 22-24, 1992 in conjunction with the Malaysia Environment Week Celebrations.

Figure 50 illustrates the attendance of DOE in environmental assignments overseas.

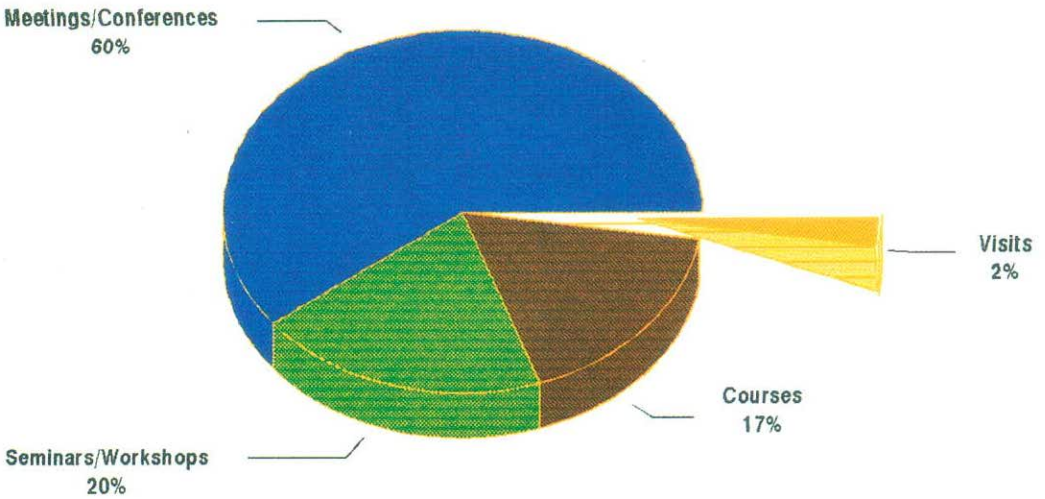


Figure 50. Department of Environment: Attendance in Environmental Assignments Overseas

Prime Minister, Dato' Seri Dr. Mahathir Mohamad signing the Convention on Biological Diversity

Sixth meeting of Ministers and State Exco members responsible for environmental matters (MEXCOE), August 3, 1992.

Courtesy call by the Indonesian Minister of State for Population and Environment on the Minister, April 1992.

ASEAN-EC Seminar on Toxic and Hazardous Waste Management Policies, June 23-26, 1992.

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